

# South African Medical Journal

## Suid-Afrikaanse Tydskrif vir Geneeskunde

P.O. Box 643, Cape Town Posbus 643, Kaapstad

Cape Town, 18 August 1956  
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### ENTEROGENOUS CYST, COMMUNICATING WITH THE LUMEN OF THE JEJUNUM

#### REPORT OF A CASE

H. J. DU TOIT M.B. BCh. DIP. SURG. (RAND)

*Assistant Surgeon Tutorial, Medical School, Johannesburg*

In this case an uncomplicated enterogenous cyst, attached to the jejunum and communicating freely with the lumen of the gastro-intestinal canal, was discovered accidentally.

In their report of a series of 68 enterogenous cysts, Gross and Ladd (1953) could find only 13 communicating with the lumen of the gastro-intestinal tract. Evans (1929) reporting a series of 24 cysts associated with the ileum, found 3 to be of the communicating type. In a resumé of the literature of 315 enterocystomata Dohn and Povlsen (1951) could find only 8 in which the lumen of the alimentary tract and that of the duplication had been continuous.

In most of the reported cases, inflammatory complications or the development of intestinal obstruction had culminated, at a fairly youthful age, in exploratory laparotomy and excision of the cysts.

The present case is worthy of note because of the following:

1. It satisfies the criteria for the diagnosis of enterogenous cyst (*a*) in having a smooth-muscle coat, (*b*) in being intimately attached to the gastro-intestinal tract, and (*c*) in its lumen being continuous with that of the intestinal tract, and therefore being lined by a mucous membrane resembling that of some part of the gastro-intestinal tube.
2. It possesses the rare characteristic of free communication with the lumen of the jejunum.
3. It is the seat of multiple firm concretions, which are shed into the jejunum from time to time.

#### CASE REPORT

Mr. C. v. d. M. aged 50, was admitted at 1.15 a.m. on 1 January 1956 to the surgical wards, suffering from an accidental gunshot wound of the abdomen. After resuscitation, laparotomy was performed. After repair of a large laceration of the left lobe of

the liver and 4 perforations of the transverse colon, and splenectomy, had been performed, a small smooth, faceted, glistening, bright-yellow body was found lying free in the peritoneal cavity. It was 3.16th of an inch in diameter (Fig. 2).

During the subsequent search for possible perforations of the small bowel, I found an enterogenous cyst attached to the jejunum 12 inches from the duodeno-jejunal junction. As shown in Fig. 1

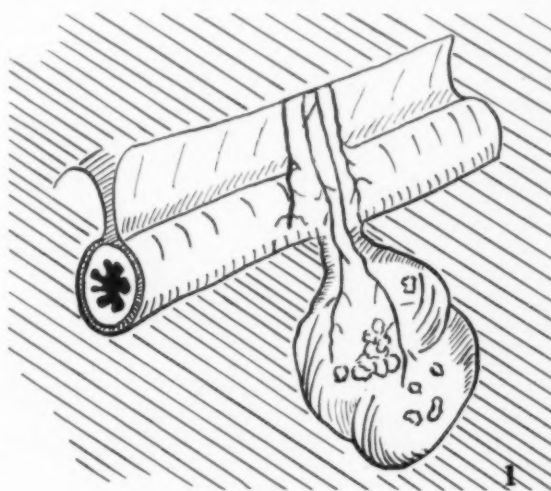


Fig. 1. Semi-diagrammatic representation of the operative findings. Note the continuity of the blood supply.

it was attached to the antimesenteric border of the jejunum, receiving its blood supply in continuity with the jejunal vessels. The cyst had a normal peritoneal covering and a muscle coat which was continuous with that of the jejunum and was partaking actively in jejunal peristaltic waves when stimulated.

The cyst contained multiple concretions similar to the one found lying free in the peritoneal cavity. The concretions were easily seen through the cyst wall, which was soft and collapsed. The stoma of communication admitted the tip of an index finger. No signs of adhesions or any other evidence of previous inflammatory episodes could be detected.

Owing to the patient's severe trauma, and the fact that the cyst was uncomplicated, it was left *in situ*. Subsequent straining of the stools produced further similar calculi, which were photo-

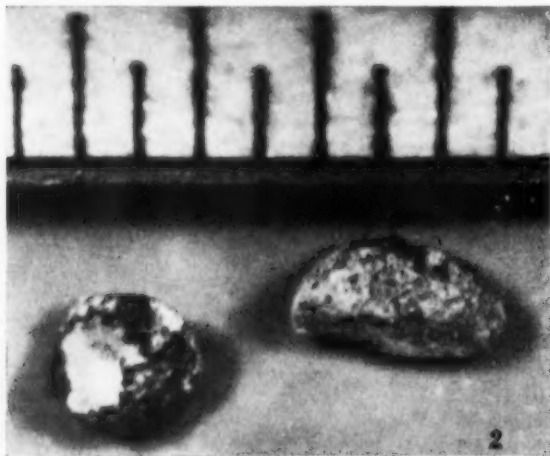


Fig. 2. Photograph of the concretion found in the peritoneal cavity and one of those obtained by straining of the stools after operation.

graphed (Fig. 2). X-ray examination of the abdomen did not show up the calculi. Attempts at filling the cyst with barium solution failed to do so. After the concretions were embedded in paraffin and the surface polished, no laminae could be seen in them.

#### DISCUSSION

As a result of the free communication with the intestinal lumen and the active peristalsis in this enterogenous cyst, it has escaped detection for 50 years. Only because

of an unfortunate unrelated accident was the cyst observed. No evidence of any previous inflammatory episode could be found, either at operation or on detailed questioning of the patient, who was an intelligent person.

Enterogenous cysts of this type may be of more frequent occurrence than is realized, eluding the surgeon because of the absence of stasis, infection, torsion or pressure phenomena on the adjacent loops of bowel.

#### SUMMARY

A case is reported in which an enterogenous cyst was accidentally discovered, presenting the following uncommon features:

1. There was free communication with the lumen of the jejunum.
2. The cyst contained multiple glistening, faceted concretions.
3. No complications had arisen during the 50 years of its existence.
4. Active peristalsis, coinciding with that of the jejunum, was seen to occur in the cyst wall.

#### OPSOMMING

'n Geval van 'n dermst, per ongeluk ontdek, wat die volgende ongewone eienskappe vertoon word beskryf:

1. Daar was vrye kommunikasie met die jejunum-lumen.
2. Die sist was gevul met veelvuldige, glinsterende konkresies met fasette.
3. Geen komplikasies het gedurende die 50-jarige bestaan van die sist ontstaan nie.
4. Aktiewe peristaltiese bewegings, wat saamval met dié van die jejunum, is in die wand opgemerk.

I am grateful to Professor W. E. Underwood and to Dr. K. F. Mills for their permission to publish this report and to Mr. D. S. Smith for his photographic reproduction.

#### REFERENCES

- Dohn, K. and Povlsen, O. (1951): *Acta Chir. Scand.*, **102**, 21.  
Gross, R. E. and Ladd, W. E. (1953): *The Surgery of Infancy and Childhood*, p. 222. Philadelphia: W. B. Saunders Co.

### OFFICIAL ANNOUNCEMENT : AMPTELIKE AANKONDIGING

#### APPOINTMENT OF EDITOR

Applications are invited for the post of Editor of the *South African Medical Journal*. Applicants must be registered medical practitioners having knowledge and experience of medical journalism. A knowledge of languages will be a recommendation. The salary attaching to the post is on the scale £1,800×60—2,400, plus cost of living allowance of £352 for married men and £176 16s. 0d. for unmarried persons. (£100 of this allowance will be consolidated for pension purposes). The commencing notch will be according to experience, at the discretion of the Federal Council.

In addition to the Association's official *Journal*, the successful applicant will be required to edit the quarterly '*South African Journal of Laboratory and Clinical Medicine*'. He will also be required to join the Association's Superannuation Fund.

Applications, together with testimonials and a certificate of health, should be addressed to the undersigned to reach him before 31 August 1956.

Medical House  
35 Wale Street  
Cape Town  
19 May 1956

A. H. Tonkin  
Secretary

#### AANSTELLING VAN REDAKTEUR

Aansoeke word ingewag vir die betrekking van Redakteur van die *Suid-Afrikaanse Tydskrif vir Geneeskunde*. Applikante moet geregistreerde geneeshere wees met kennis en ondervinding van die geneeskundige joernalistiek. 'n Kennis van tale sal 'n aanbeveling wees. Die salaris aan die pos verbode is op die skaal £1,800×60—2,400, plus 'n duurtetoelag van £352 vir getroude mans en £176 16s. 0d. vir ongetroude persone. (£100 van hierdie toelag sal vir pensioendoelindes by die salaris gekonsolideer word.) Die beginsalaris sal na goedgefinke van die Federale Raad met inagneming van vorige ondervinding vasgestel word.

Die applikant sal verwag word om benewens die redaksie van die Vereniging se amptelike *Tydskrif* ook dié van die kwartaalblad '*Suid-Afrikaanse Geneeskundige Tydskrif vir Laboratorium- en Kliniekwerk*' op hom te neem. Hy sal ook by die Vereniging se pensioenfonds moet aansluit.

Aansoeke, vergesels van getuigskrifte en 'n gesondheidsertifikaat, moet aan die ondergetekende gerig word om hom vóór 31 Augustus 1956 te bereik.

Mediese Huis  
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19 Mei 1956

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# South African Medical Journal

## Suid-Afrikaanse Tydskrif vir Geneeskunde

### VAN DIE REDAKSIE

#### 'YSLANDSE SIEKTE'

Die geheimsinnige uitbreking verlede jaar van 'n siekte onder die verpleegsters van die Addington-hospitaal in Durban, wat baie soos poliomiëlitis vertoon het, was een uit 'n reeks soortgelyke verwarrende epidemies wat wêreldwye belangstelling gewek het. Menigvuldige bewyse getuig dat die besondere simptomegroep wat hier aangetref is, in werklikheid 'n heeltemal nuwe siekte is waaraan 'n aparte naam gegee moet word.

Hierdie Tydskrif het na die Durbanse uitbreking verwys as 'Yslandse Siekte',<sup>1</sup> omdat die eerste wetenskaplik gerapporteerde gevalle van die nuwe siekte in 1948 en 1949 in Akureyri, Ysland, voorgekom het. Sedertdien het omtrent 'n dosyn verhandelings in die wêreldliteratuur verskyn, wat elk 'n verdere groep gevalle wat waarskynlik aan hierdie simptomegroep behoort, aangemeld het, en wat almal sommige van of al die volgende eienskappe vertoon: verlamming van die skeletspiere met pyn en uiterste teerheid, wat soms verskeie weke duur; geen uitering nie; oordrewe refleksse; gevoelsenuweeversteuring; normale harsing- en rugmurgvloei-stof; emosionele versteurings gedurende die herstelperiode; retikulo-endotele verwikkelings en 'n lang verloop met heraanvalle. Die prognose is betreklik gunstig.

Die jongste gerapporteerde uitbreking—8 gevalle by die Royal Free-hospitaal, Hampstead, Londen<sup>2</sup>—is kenmerkend van die kliniese probleem by hierdie siekte. By die meeste gevalle was daar 'n sekere mate van koorsigheid, en alle gevalle het, tot 'n meerdere of mindere mate, spierswakheid vertoon met gevoel-senuweeversteurings, oordrewe refleksse, en geen spier-uitering nie. Bowendien was herhaalde ondersoek van die harsing- en rugmurgvloei-stof negatief.

Ten spyte van die teenstrydige individuele bevindings en die afwykings in die kliniese beeld wat verskillende werkers oor die hele wêreld gerapporteer het, blyk dit taamlik oortuigend uit die bevindings dat ons hier te doen het met 'n enkel entiteit wat voorheen ongeklassifiseerd was, maar wat sekere eenvormige basiese kenmerke toon. Die herhaalde mislukkings om enige van die poliomiëlitis- of Coxsackie-virusse af te sonder of om inderdaad enige ander soort virus in enige van die volgende epidemies te isoleer, kan nie aan 'n tegniese fout of aan blote toeval toegeskryf word nie: Akureyri, Ysland (1948); Adelaide, Australië (1949); die Staat New York (1950); die Middlesex-hospitaal, Londen

### EDITORIAL

#### ICELAND DISEASE

The mysterious outbreak of 'a disease resembling poliomyelitis' among the nurses at the Addington Hospital, Durban, last year was one of a series of similar perplexing epidemics that have aroused worldwide interest. Evidence has accumulated that the peculiar syndrome encountered there is actually an entirely new disease-entity, to which a separate name should be given.

This *Journal* referred to the Durban outbreak as 'Icelandic disease',<sup>1</sup> a name given because the first scientifically-reported manifestation of the new disease-entity occurred in Akureyri, Iceland, in 1948 and 1949. Since that time about a dozen papers have appeared in the world literature, each reporting a further set of cases that probably belong to this syndrome, each exhibiting some or all of the following features: paralysis of skeletal muscles, accompanied by pains and exquisite tenderness often lasting several weeks; no wasting; exaggerated reflexes; sensory disturbances; a normal cerebrospinal fluid; emotional disturbances in convalescence; reticulo-endothelial involvement; and a protracted course with relapses, but a relatively benign prognosis.

The most recent outbreak reported—8 cases from the Royal Free Hospital, Hampstead, London<sup>2</sup>—typifies the clinical problem involved. Most cases showed some degree of pyrexia and all exhibited muscular weakness to a greater or lesser degree, with sensory disturbances, exaggerated reflexes and no muscular wasting. Moreover, repeated examination of the cerebrospinal fluid was negative.

Despite discrepant individual findings and variations in the clinical pictures reported by different workers around the globe, the evidence seems fairly convincing that we are dealing with a single entity, previously unlabelled but showing certain uniform basic features. Repeated failure to isolate any of the poliomyelitis or Coxsackie strains or, indeed, any other type of virus, in any of the following outbreaks cannot be ascribed to technical error or merely to coincidence: Akureyri,

(1952); Coventry, Engeland (1953); Berlyn, Duitsland<sup>3</sup> (1954); Durban, Natal<sup>1</sup> (1955); en die Royal Free-hospitaal, Hampstead, Londen<sup>2</sup> (1955).

In alle gevalle, behalwe dié van Akureyri, was die harsing- en rugmurgvloeistof in alle opsigte heeltemal negatief. Al die uitbrekings, behalwe die laaste een by die Royal Free-hospitaal, was in die begin verwar met poliomiëlitis—lesers sal die koerantverslae tydens die uitbreek by die Addington-hospitaal onthou—en al die gevalle het gedurende die poliomiëlitis seisoen voorgekom. In teenstelling het die epidemies voorgekom buite die seisoen vir die sogenaamde encephalitis lethargica, waaraan daar by onderskeidende diagnose gedink was. Die aantasting van die limfkliere het die dokters laat wonder of die siekte 'n neurologiese afwyking van aansteeklike mononukleose is; die bedruktheid en emosionele onstabieliteit wat tydens die herstelperiode voorkom, het die vraag van histerie na vore gebring. Die feit bly staan dat die siekte nie regtig onder enige bestaande diagnose sorteer nie.

Om hierdie rede—en veral omdat genoegsame bewyse klaarblyklik ingesamel is om dit te regverdig—is dit miskien wenslik om hierdie nuwe kliniese siekte-entiteit 'n eie naam te gee. Klinici en tydskrifte kan nie aanhou om negatief te verwys na 'n siekte wat hulle as positief beskou nie: 'nie poliomiëlitis nie',<sup>5</sup> 'n siekte wat soos poliomiëlitis lyk',<sup>3</sup> en 'harsing- en rugmurgontsteking wat baie trekke van poliomiëlitis het',<sup>2</sup> is nie goeie benamings nie. Niemand behalwe die Yslanders self het nog regtig die benaming van 'Yslandse Siekte' aanvaar nie. Onlangs het die *Lancet*, toe hulle hierdie siekte as eenheid erken het, die gebruik van 'n suiwer beskrywende titel vir 'n siekte sonder erkende oorsaak of vasgestelde siekteleer' afgekeur, en die benaming, 'benign myalgic encephalomyelitis'<sup>6</sup> voorgestel.

1. Van die Redaksie (1955): *S. Afr. T. Geneesk.*, **29**, 331, waar ander verwysings aangegee word.
2. Ramsay, A. M. en O'Sullivan, E. (1956): *Lancet*, **1**, 761.
3. Sumner, D. W. (1956): *Ibid.*, **1**, 764.
4. Hill, R. W. (1955): *S. Afr. T. Geneesk.*, **29**, 344.
5. Van die Redaksie (1954): *Lancet*, **2**, 1060.
6. Van die Redaksie (1956): *Lancet*, **1**, 789.

Iceland (1948); Adelaide, Australia (1949); New York State (1950); the Middlesex Hospital, London (1952); Coventry, England (1953); Berlin, Germany<sup>3</sup> (1954); Durban, Natal<sup>1</sup> (1955); and the Royal Free Hospital, Hampstead, London<sup>2</sup> (1955).

In all except the Akureyri cases the cerebrospinal fluid was completely negative in all respects. All the outbreaks (except the last one at the Royal Free Hospital) were initially confused with poliomyelitis—readers will recollect the newspaper reports at the time of the Addington outbreak—and all occurred in the season of poliomyelitis prevalence. In contrast, the outbreaks occurred out of season for so-called encephalitis lethargica, which was considered in differential diagnosis. The lymphadenopathy has aroused speculation whether the disease is a neurological variant of infectious mononucleosis; the depression and emotional lability present in the convalescence has raised the question of hysteria. The fact remains that the condition does not really fit any existing diagnostic pigeon-hole.

For this reason—and particularly since sufficient evidence seems to have accumulated to justify it—it may be as well to give the new clinical entity a distinctive title. Clinicians and journals cannot continue to refer in negative fashion to a disease which they believe to be positive—'Not poliomyelitis',<sup>5</sup> 'a disease resembling poliomyelitis',<sup>3</sup> and 'encephalomyelitis simulating poliomyelitis',<sup>2</sup> are not good names. Apart from the Icelanders themselves, no one has really accepted the name of 'Icelandic disease'. Recently the *Lancet*, in committing itself to recognition of the entity, deprecated the use of a purely descriptive title for 'a disorder without a known cause or established pathology' and plumped for 'benign myalgic encephalomyelitis'.<sup>6</sup>

1. Editorial (1955): *S. Afr. Med. J.*, **29**, 331, where other references will be found.
2. Ramsay, A. M. and O'Sullivan, E. (1956): *Lancet*, **1**, 761.
3. Sumner, D. W. (1956): *Ibid.*, **1**, 764.
4. Hill, R. W. (1955): *S. Afr. Med. J.*, **29**, 344.
5. Editorial (1954): *Lancet*, **2**, 1060.
6. Editorial (1956): *Ibid.*, **1**, 789.

## CARCINOMA OF THE OESOPHAGUS AND GASTRIC CARDIA\*

DENIS FULLER, F.R.C.S.

Thoracic Surgeon, Johannesburg

This paper has been stimulated by a controversy which has developed in surgical and radio-therapeutic clinics throughout the world, during the last decade. Before this time surgery for carcinoma of the oesophagus was seldom undertaken and carried such a high mortality that it was only the few pioneers in this field of surgery who persisted in this form of treatment. More recently the technical details have been perfected to a degree that operation even on aged patients has become relatively safe and in many instances the mortality is below 10%.

\* A paper presented at the South African Medical Congress, Pretoria, October 1955.

All the European cases seen at the Johannesburg General Hospital during the last 5 years have been investigated and an analysis will be made of the form of treatment and the survival rate. Eighty such patients were admitted; of these many were treated throughout by myself, (Group II—Table IX) and others, admitted into general surgeons' wards, were oesophagoscoped by myself while the surgeon concerned carried out subsequent treatment (Group I—Table VIII); some have received both surgery and radio-therapy, others radio-therapy alone (Group III—Table X), while a proportion have had no treatment (Group IV—Table XI). Altogether

10 other surgeons, both thoracic and general, were concerned with the treatment of these cases and amongst them performed 20 operations (Group I)—all on hospital patients—, while 17 were done by myself (Group II). No attempt has been made to ascertain the number of patients that were attended privately, but they were probably very few.

#### ETIOLOGY

**Heredity.** Clarke and McConnell<sup>1</sup> of Liverpool have recorded 6 cases occurring in one family in 2 generations. It is significant that 5 of these cases were females and that they developed their cancer at a younger age than is the usual average (the youngest was 29 and the oldest 57). Only 2 of the 6 were tested for blood grouping, one being A and the other B. (A statistically significant association has recently been observed between blood-group A and carcinoma of the stomach—Aird *et al.*<sup>2</sup>) Stranahan *et al.*<sup>10</sup> found that in their series of 64 cases 30% had a positive family-history of carcinoma elsewhere. Wu *et al.*<sup>3</sup> found 22.1% of his patients had a family history of carcinoma (as opposed to 5.5% in a random group of 200 patients admitted for other causes).

**Diet.** Wu *et al.*<sup>3</sup> investigated 172 cases and found carcinoma commoner in the north-eastern provinces of China, where the populace eat maize, millet and kaoliang, which are rougher than rice, which is eaten more commonly in the south. Kaoliang is thought to have carcinogenic properties. He found 50% of the patients were habitual drinkers of pai-can, a beverage containing 60% to 85% alcohol distilled from kaoliang. In Japan the high incidence of oesophageal carcinoma in males is ascribed to the fact that they receive the first and hottest portion of rice, and drink saki. Of Nightingale's 413 cases,<sup>1</sup> only 4 indulged excessively in hot drinks and 65 drank alcohol excessively; 48 were heavy smokers. Of Stranahan's 64 cases,<sup>10</sup> 20 were moderately heavy drinkers.

In this present series records are deficient in many respects and the history of alcohol or smoking has not been recorded; 5 were known to be heavy drinkers and one habitually chewed tobacco.

**Benign Lesions.** Carcinoma does not commonly occur in benign lesions. There were less than 50 such cases reported up to 1943 (quoted by Nightingale<sup>1</sup>).

There are numerous instances of the growth occurring in association with caustic strictures. Kiviranta<sup>5</sup> of Finland found 9 in 381 cases of corrosion, while Nightingale<sup>1</sup> found 30 references to this association.

**Syphilis and Leucoplakia.** These have long been considered pre-cancerous conditions in the mouth and throat but there is no reference to any positive association with them in the modern literature on carcinoma of the oesophagus.

**Occupation.** A high incidence of cases has been reported amongst barmen and commercial travellers. Stranahan *et al.*<sup>10</sup> had 3 bartenders in their series of 64 cases. The hospital records of the present series in respect of occupation are defective. The number of farmers in the group is worthy of note, but there is no indication of how long the patient had been farming.

**Economic Status.** The vast majority of cases occur

amongst the lower-income group. Parker *et al.*,<sup>7</sup> reporting from the Roper Hospital, South Carolina, found 163 (96%) of 170 cases were in hospital-type patients, although the proportion of hospital to private patients in this institution was 1 to 2.

**Sex.** Throughout the world generally males are more prone to develop this disease than females. Table I

TABLE I

Author	Year	Cases	Males %	Females %
Nightingale <sup>1</sup> .. ..	1954	341	82.7	17.3
USA (official figures) ..	1941-50	32,922	79.7	20.3
England .. ..	—	—	61.8	38.2
Parker <sup>2</sup> (S. Carolina) ..	1952	*	±50	±50
Wu <sup>3</sup> (China) .. ..	—	—	92.3	7.7
Garlock <sup>25</sup> .. ..	1954	457	66.7	33.3
Nylander <sup>17</sup> (Helsinki) ..	1952	—	48.4	51.6
Elfskind <sup>37</sup> (Oslo) .. ..	—	44	82	18
Stranahan <sup>10</sup> .. ..	1950	64	85.9	14.1
Fuller .. ..	1955	80	85	15

\* 14% White, 86% Coloured.

gives the relative proportion from a number of sources. In the present series of 80, 85% were males and 15% females.

**Age.** In Garlock's series<sup>25</sup> 67% of cases of oesophageal carcinoma were between 50 and 70 years of age. With adenocarcinoma of the cardia 20% of the cases were between 30 and 50. Oesophageal carcinoma has been reported in infants of 2 years, and it is common in patients over 80.

**Incidence.** In the USA from 1946 to 1950 oesophageal carcinoma accounted for 1.8% of all neoplasms (Nightingale<sup>1</sup>). Palmer<sup>6</sup> quotes figures, based largely on German sources, showing that oesophageal carcinoma accounted for 7.1% of 37,377 necropsies performed for malignant diseases. Of 636 cases of intrathoracic malignancy reviewed by D. Adler (personal communication) in Johannesburg, 12% were primarily oesophageal. Of all cancer cases at the New York Memorial Hospital since 1940, 3% were oesophageal in origin (Watson *et al.*<sup>9</sup>). In the Roper Hospital from January 1940 to January 1951 there were 155 admissions for carcinoma of the oesophagus, 146 of the stomach and 130 of the colon and rectum (Parker *et al.*<sup>7</sup>). According to Sweet,<sup>8</sup> 2,700 persons die yearly of carcinoma of the oesophagus in the USA and this form of cancer is the fourth in frequency. In various other statistics 4-10% of all cancer deaths are due to oesophageal cancer.

There appears to have been an increase in the incidence of this disease; much of the apparent increase may be due to the greater interest in the lesion and better diagnostic facilities. In 1934 there were in the USA 2,243 deaths from oesophageal carcinoma, whereas there were 3,953 in 1949; the intervening years showed a progressive increase while the number of deaths from neoplasms of stomach, intestine, rectum and anus remained much the same.

The annual death rate from cancer of the oesophagus per 100,000 population (based on death registration) was as follows: in the USA 1.0 (1915), 1.7 (1932); in England and Wales 5.9; in Scotland 3.5.

## SURGICAL ANATOMY

The oesophagus is 25-27 cm. in length, measured from the cricopharyngeus muscle to the gastric cardia. It is however, generally measured from the upper incisors, which are 15 cm. above the cricopharyngeus. It is narrowed at 4 points—at its commencement, at the level of the aortic arch (20 cm.), at the left main bronchus (22 cm.) and at the cardia. Disease is commonest at these levels. It is lined by stratified squamous epithelium and has two muscular coats—an inner circular and an outer longitudinal. There is no serous covering, the organ lying throughout its length in a loose areolar network, consisting of nerve fibres, blood vessels, and lymphatic channels which communicate with the rich submucosal lymphatic system.

These lymphatics drain into 4 sets of lymph nodes. In the upper region (cervical and superior mediastinal) the drainage is mainly to the deep cervical groups of glands. In the middle portion drainage is to the pulmonary hilar groups of glands and to posterior mediastinal glands lying alongside the oesophagus in the inferior pulmonary ligaments. From these regions the drainage is up to the cervical region or down to the coeliac group of glands and the glands around the cardia. Drainage from the lowest portion of the oesophagus is to the glands alongside the gastric cardia and the lesser curvature, and to the coeliac group of glands. The lymphatic drainage of the gastric cardia is to the glands along the lesser curvature and to the coeliac glands. Drainage also occurs along the course of the vasa brevia to the spleen and thence to the lymphatic nodes along the course of the splenic vein.

According to the surgical approach the oesophagus can be divided into 3 regions:

(a) The cervical region, where treatment need be only local, not necessitating a transthoracic approach.

(b) Upper thoracic (3/4ths of the thoracic oesophagus), extending from the thoracic inlet to 2 inches above the diaphragm. Resection at this level demands a supra-aortic or even a cervical anastomosis.

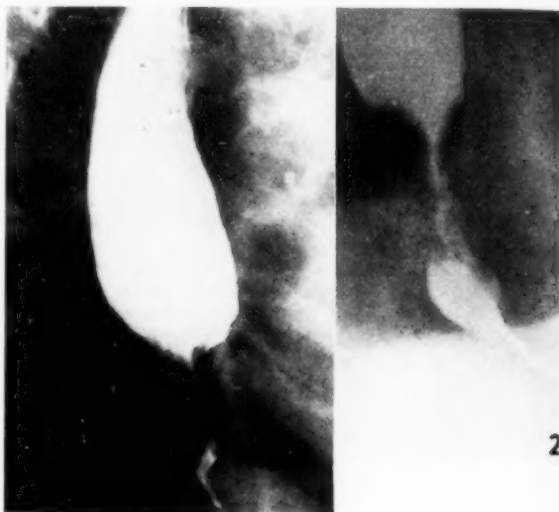
(c) Lower thoracic and abdominal. Here infra-aortic anastomosis will suffice.

(d) Carcinoma of the gastric cardia is generally grouped with lower oesophageal carcinoma and its approach is therefore included here. An infra-aortic anastomosis is generally adequate, but total gastrectomy is necessary for a radical cure, when continuity is effected by oesophago-jejunostomy or by using a colon graft. Retention of the pyloric antrum and anastomosis with this is justifiable if the growth is well localized to the cardia.

## PATHOLOGY

Carcinoma of the oesophagus is generally of the squamous (epidermoid) type. Adenocarcinoma has been described, possibly arising in mucous glands or in areas of ectopic gastric mucosa. Parker *et al.*<sup>7</sup> were unable to trace any case of primary adenocarcinoma from 170 cases seen during the previous 11½ years. Adenocarcinoma arising in the gastric cardia may infiltrate for considerable distances up the oesophagus (Fig. 1).

The gross lesion may be one of 3 varieties. (1) The scirrhus type (Fig. 2) produces a circumferential constriction and early symptoms from dysphagia. It



Figs. 1 and 2

infiltrates the submucous and muscle layers but metastasizes relatively late. It is the best variety for resection. (2) The proliferating or cauliflower type (Fig. 3) causes obstruction by virtue of its bulk. It bleeds easily and spreads to lymphatic glands early. Being frequently anaplastic it is the least satisfactory to treat. (3) The



Figs. 3 and 4.

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ulcerating variety (Fig. 4) forms shallow superficial ulcers which cause less dysphagia. There is often pain associated with this type and local spread through the full thickness of the oesophageal wall causes early adherence to adjacent structures and perforation.

Of primary oesophageal carcinomas, 10% occur in the cervical region, 20% in the region immediately above and below the diaphragm, and 70% in the remainder of the oesophagus.

*Carcinoma in the cervical oesophagus*—hypopharyngeal or post-cricoid—occurs in a greater proportion of females. Many of these lesions may be indistinguishable from those arising in the posterior larynx which have spread to the oesophagus. Growths here spread to adjacent structures and to the deep cervical group of lymph-glands. The swelling of the enlarged glands in the neck may be the first sign of a small primary lesion, although a prior difficulty in swallowing or odynophagia (a fullness, oppression or sticking sensation) has frequently been labelled 'neurosis'. The association of post-cricoid carcinoma with Plummer-Vinson syndrome is well known.

Because of local oedema of the larynx and trachea as well as involvement of the recurrent laryngeal nerves, hoarseness is a common symptom. With increasing difficulty in swallowing, a spill-over into the larynx and trachea leads to the development of an 'oesophageal lung' with broncho-pneumonia and lung abscess. In one of the cases in this series there was a lung abscess with a diameter of 7 cm. in the right upper lobe associated with a carcinoma of the cervical oesophagus.

*Carcinoma of the thoracic oesophagus* does not behave in any essential way differently from its counterpart in the cervical region. These growths spread in the submucosal layer both proximally and distally for considerable lengths. Multiple oesophageal lesions occur. Such satellite growths probably represent submucosal spread rather than implantation growths. Nightingale<sup>4</sup> had 9 of 413 cases with dual growths and Walther<sup>11</sup> 8 out of 72. In one case in this series a mucosal nodule was seen on oesophagoscopy examination 10 cm. above the main growth.

Perforations into trachea, bronchus, mediastinum or aorta account for a large number of deaths. Cough or haemoptysis may be an indication of bronchial involvement, and in one case seen the first sign of any untoward happening was a severe choking attack and bout of coughing lasting 4 hours, following which there was an established broncho-oesophageal fistula. Commencing perforation of the aorta may be heralded by a small brisk haematemesis followed in a few hours or days by a torrential fatal haemorrhage. Because of the close proximity of the many structures at the pulmonary hila, carcinoma arising at this level early involves these structures and a greater number of inoperable cases will be encountered here, as well as at the thoracic inlet.

Secondary growths in the oesophagus are not common, occurring in decreasing frequency in bronchogenic carcinoma, thyroid and laryngeal carcinoma, and tumours of the adrenal.

There are no reports of carcinoma following scleroderma.

*Carcinoma of the gastric cardia* involves the lower oesophagus, sooner or later producing symptoms of dysphagia. Earlier symptoms are high epigastric pain and indigestion. Occult bleeding occurs and may produce a severe anaemia, while frank bleeding also occurs. This is less common in the ordinary squamous carcinoma of the oesophagus (except where the aorta is involved). Growths from the cardia may extend a considerable way up the oesophagus, while direct spread down the lesser curvature may extend right to the prepyloric region, resulting in a high recurrence rate if any portion of the stomach is used for anastomotic purposes. Secondary infiltration to the glands in the lesser sac and along the splenic vessels makes a wide removal and total gastrectomy desirable. Metastases in the liver occur earlier than they do from the squamous growths of the oesophagus.

*Metastasis.* Many of the earlier writers were well aware of the fact that carcinomas originating in the oesophageal mucosa were resectable, pathologically speaking, in a fairly large number of cases. Debakey and Oschsner<sup>11</sup> report that 40.7% of 1,025 collected cases showed no evidence of metastases at autopsy.

TABLE II

		Necropsies	% Free of Metastases
Debakey <sup>11</sup> (New Orleans)	.. .. .	1,025	40.7
Helsley <sup>13</sup> (Vienna, 1923)	.. .. .	70	64
Raven <sup>44</sup> (St. Bart's Hospital, London, 1931)	.. .. .	41	21
Zuppinger <sup>43</sup> (Zurich, 1936)	.. .. .	—	33
Watson <sup>9</sup> (New York, 1936)	.. .. .	—	± 50

Helsley,<sup>13</sup> in 1923, studied 70 fatal cases at the Franz Joseph Hospital in Vienna. He found 64% of the tumours purely local, with no metastases to the regional lymphatic nodes. Among 49 necropsies at the Cook County Hospital in Chicago 28.5% of the tumours had not metastasized (see Table II).

Death results from perforation into an adjacent vital structure, 'spill-over' lung-abscess and broncho-pneumonia, or starvation. Generally the higher the lesion the sooner will inhalation lung-abscess occur. In lesions at or above the pulmonary hila, fistulous communications with the trachea or bronchi cause coughing and choking during swallowing and the early development of inhalation infection of the lungs.

Carcinoma infiltrating the vertebrae will cause pain, often with segmental radiation. However, pain itself is not necessarily an indication of spread to neighbouring structures, and many writers have found operable growths in cases in whom pain had been a dominant symptom. In these cases malignant ulceration with secondary infection may engender a muscular spasm which is the cause of the pain. Possibly also involvement of the autonomic nerves may result in reflex pain.

## SYMPTOMS

Cancer of the oesophagus may develop very insidiously and reference to Tables VII, IX, X and XI will indicate how variable is the interval between onset of symptoms and admission to hospital. A number of patients admit

to only a few weeks symptoms although when first seen the local growth is well advanced. On the other hand careful questioning will in many instances reveal the fact that a mild disturbance in the swallowing mechanism or pain on swallowing has long been present.

*Dysphagia* is the commonest symptom and sooner or later will present in all cases. It is generally first noticed when swallowing bulky foods such as meat or bread-crusts. There is a sense of the food being held up, the site of which is often accurately localized by the patient. After a while he may feel the food passing, or a drink of water may be necessary to help it through. Frequently, however, the food is returned, the 'vomit' containing no digested material and no gastric acid. Ultimately the patient learns to avoid the offending articles of food and may be content to continue on his new restricted diet until the constricted oesophageal lumen becomes completely obstructed by some food particle or he has to resort to living on a liquid diet.

In cervical and upper oesophageal growths a sense of oppression in the throat or behind the upper sternum and a feeling of something 'sticking' (odynophagia) leads to persistent swallowing. Spill-over to the larynx causes coughing on swallowing.

*Pain.* At first there may be a burning pain on swallowing, particularly with lower lesions, when a high epigastric pain is felt, frequently diagnosed as indigestion. Pain does not necessarily mean that the growth is inoperable. It was present in 6 out of 7 cases in whom Meredith Brown<sup>26</sup> was able to do a radical resection.

*The vomiting* is not true vomiting, but a regurgitation of oesophageal contents (see above).

*Hoarseness* occurs in lesions above the aortic arch and is due to involvement of the larynx, or of the recurrent laryngeal nerves.

*Loss of weight* is almost invariable, although adequate nourishment can often be taken until complete obstruction suddenly supervenes. Loss of weight therefore may have been noticed over many months or only for a few days, during which time little or no nourishment may have been taken. It is due to starvation and dehydration and rarely at first to malignant cachexia.

*Halitosis* is a common symptom due either to tissue break-down and secondary infection in a cervical oesophageal carcinoma or to putrefaction in the stagnant oesophageal contents.

*Haemorrhage.* Occult bleeding leads to an iron-deficiency anaemia. Fresh haematemesis are often an indication of impending doom; they may indicate commencing perforation of the aorta. When this occurs there are often a few small 'pilot' bleeds before the sudden massive fatal haemorrhage. Haemoptysis may indicate involvement of the trachea or bronchus.

*Cough* is common and is caused by fullness of the proximal oesophagus, when further attempts at swallowing cause spill-over into the larynx and down the trachea. High oesophageal carcinoma may also alter the normally smooth swallowing mechanism and produce a neuromuscular incoordination. Oesophago-bronchial or oesophago-tracheal fistulae result in coughing whenever any food is swallowed. An inhalation bronchopneumonia develops, with subsequent abscess formation.

Fulminating pulmonary infection is a common cause of death in the debilitated or those not adequately protected by antibiotics.

*A lump in the neck* produced by enlarged cervical glands may be the first manifestation of a primary oesophageal carcinoma.

*Swelling of the abdomen and legs* is due to a nutritional oedema resulting from inadequate intake of proteins over a long period, and later to liver infiltration and failure.

*Uraemia* is a pre-terminal condition resulting from dehydration and prolonged vomiting and often precipitated by the old age of the patients.

#### INVESTIGATION

*The history and clinical findings* will often suffice to enable the surgeon to make a confident diagnosis.

*Barium swallow and X-ray* will confirm his suspicions. It must be emphasized that a small lesion may be missed on screening. In one of our cases no lesion was seen on X-ray examination, but the physician was convinced on clinical evidence that a lesion was present and within a few days a carcinoma was demonstrated by further studies. Carcinoma of the gastric cardia is notoriously difficult to visualize radiologically.

*Oesophagoscopy.* This is the most important single investigation and should be employed in all cases of dysphagia where no clear-cut radiological or clinical diagnosis can be made. In early or doubtful cases oesophagoscopy may show a growth before a lesion can be demonstrated radiologically. Garlock<sup>25</sup> had reported oesophagoscopy to have been positive in 208 of 214 cases. In the series under review a positive histological diagnosis was obtained in all but 4 of the cases that were examined.

#### TREATMENT

The available methods of treatment are surgery and radiotherapy. The results of both are disappointing but, on the evidence, surgery at present appears to offer the better chance of cure. Recorded five-year cures are few, partly because much of the work in this field has only developed in recent years. However, the period of survival of the cases dying after surgery gives cause for a measure of optimism. By the same token, radio-

TABLE III

Author	Year of Report	Number of Cases	Operative Mortality Deaths in Hospital
H. D. Adams <sup>12</sup>	1941	68	50%
Wu <sup>3</sup>	1943	120	35.8%
Garlock <sup>20</sup>	1944	60	48%
W. E. Adams <sup>21</sup>	1947	60	30%
Sweet <sup>8</sup>	1948	189	15.9%
Wu <sup>3</sup>	1949-50	39	5%
Fuller	1955	17	11.7%

therapeutic technique has changed in recent years and it is probable that better results will be obtained in cases subjected to this form of treatment latterly. The mortality from surgery must be weighed against the

possible benefits, but with suitable selection and preparation of the patient, surgery in the hands of those who have had adequate experience has become a relatively safe procedure, with mortality figures no greater than for many other major surgical procedures (Table III).

No distinction is made in Table III between high-level and low-level lesions. The mortality rate in low-level carcinoma is less than in that at the aortic arch or above, although some recent writers have been able to produce results from the higher lesions comparable with those from lower down. In some instances carcinoma of the gastric cardia is included in the series, as it is in mine.

In my series one patient died during the operation. In another patient, in whom the growth was found to be infiltrating the left main bronchus and an old pulmonary tuberculosis had produced extensive dense pleural adhesions, the stripping of which resulted in much lung damage, a supra-aortic oesophago-gastrostomy was performed without removal of the tumour. He died on the 8th post-operative day from an oesophageal leak at the site of the tumour, and empyema. In the remainder of the cases radical resection was performed.

In most of the reported series the commonest cause of death is leakage at the site of anastomosis and resultant empyema. Other common causes of death are post-operative atelectasis and pulmonary infections, coronary thrombosis (common in many series), and pulmonary embolus. Hepato-renal failure also occurs.

#### *Survival after Surgery.*

This depends upon whether there was lymph-node involvement at the time of operation. The published series do not generally classify their patients into those in whom there was such involvement and those in whom there was not. Sweet<sup>28</sup> however, in a masterly review, has attempted to draw a distinction between those in whom a 'curative' resection was done and those which had lymph-node involvement, in whom a 5-year cure could not be anticipated. His over-all 5-year survival-rate out of 120 resected cases in the middle third of the oesophagus was 4%, but of 31 'curative' resections there was a 50% 3-year survival and so far a 14% 5-year survival, although many who have lived 3-years were not operated upon long enough ago for a 5-year appraisal. In growths of the lower third of the oesophagus he has a 17% 5-year survival out of 82 cases. From 67 growths of the gastric cardia in whom 'curative' resection was carried out there was a 44% 3-year survival and 34% 5-year survival; the over-all 5-year survival rate for growths at this level is 5%.

In view of the large numbers of cases found at autopsy in whom no lymph-nodes have been found to be involved (28% to 60%), carcinoma of the oesophagus would appear to be unusually amenable to eradication by surgery or radiotherapy. However, lesions under the aortic arch or adjacent to the left main bronchus produce fatal results by perforation of these structures. It should be within the scope of surgeons versed in these techniques to excise portions of the aorta and replace them with arterial or plastic grafts. Removal of a section of

trachea within the thorax may also be feasible, although few of the reported attempts to replace defects of the trachea by grafts have been successful. The cervical trachea, however, can readily be removed along with the larynx and cervical oesophagus.

Table IV gives an indication of the mortality rates and survival rates with lesions at various levels. The division of the oesophagus into upper, middle and lower thirds is rather arbitrary and many carcinomas of the upper third are really hypopharyngeal growths or may have originated in the larynx. For these the Wookey operation has been performed. For carcinoma below the

TABLE IV. MORTALITY RATES

Author	Total Cases	Death	Mortality
<i>Upper Third</i>			
Chauncey <sup>29</sup> .. .. .	7	2	28.6%
Garlock <sup>25</sup> (1954) .. .. .	16 <sup>1</sup>	10	60%
Sweet <sup>16</sup> (1952) .. .. .	17 <sup>2</sup>	0	0%
Grimes <sup>27</sup> (1952) .. .. .	17 <sup>2</sup>	2	12%
<i>Middle Third (supra-aortic anastomosis)</i>			
Garlock <sup>25</sup> (1954) .. .. .	43	14	24%
Sweet <sup>33</sup> (1954) .. .. .	120	30	25%
	31 <sup>3</sup>	6	20%
Sellors <sup>17</sup> (1952) .. .. .	60	16	26%
Nakayama <sup>16</sup> (1954) .. .. .	84 <sup>4</sup>	11	13.1%
	14 <sup>3</sup>	0	0%
Wu <sup>3</sup> (1951) .. .. .	55	—	24.4%
Watson <sup>9</sup> (1954) .. .. .	45 <sup>6</sup>	11	24.4%
<i>Lower Third (infra-aortic anastomosis)</i>			
Garlock <sup>25</sup> (1954) .. .. .	32	11	34%
Sweet <sup>33</sup> (1954) .. .. .	82 <sup>2</sup>	—	7%
Sellors <sup>17</sup> (1952) .. .. .	27	6	22%
Nakayama <sup>16</sup> (1954) .. .. .	224 <sup>7</sup>	6	2.5%
Wu <sup>3</sup> (1951) .. .. .	33	—	18.5%
Elfskind <sup>37</sup> (1952) .. .. .	24	4	16.7%
<i>Carcinoma of the Gastric Cardia</i>			
Garlock <sup>25</sup> (1954) .. .. .	187	—	24.7%
Sweet <sup>33</sup> (1954) .. .. .	85	—	14%
	67 <sup>3</sup>	—	7%
Clagett <sup>15</sup> (1946) .. .. .	33	—	13%
Wu <sup>3</sup> (1951) .. .. .	38	—	12.5%
Chauncey <sup>29</sup> .. .. .	23	5	21%

1. Thorek operation. 2. Wookey operation. 3. 'Curative'. 4. Anterior extrathoracic anastomosis. 2. Right thoraco-abdominal approach. 3. Right approach. 7. Including carcinoma of the cardia.

post-cricoid level continuity can be established by pharyngo-gastrostomy. It matters little whether an anastomosis is performed in the chest above the aortic arch or in the neck. In fact a higher-level anastomosis can certainly be performed at less risk of its breaking down, and if need be can be completed at a later stage. It is generally accepted though that post-cricoid carcinoma of the oesophagus is best treated by radiotherapy.

The excellent 3- and 5-year survival rates in Sweet's 'curative' series and Garlock's series are astonishing in view of the age of many of these patients, who must



TABLE V. SURVIVAL RATES

Author	Total cases	Situation	Survival Rates			Years
			2	3	4	
Chauncey <sup>29</sup>	7	Upper third	—	—	—	16-6
Garlock <sup>25</sup>	43	Middle third	—	—	—	10
Sweet <sup>33</sup>	120	Middle third	—	—	20	4
	31 <sup>1</sup>	Middle third	—	—	50	14
Nakayama <sup>18</sup>	14 <sup>2</sup>	Middle third	—	18	—	—
Garlock <sup>25</sup>	32	Lower third	—	—	—	41-6
Sweet <sup>33</sup>	82	Lower third and cardia	—	—	—	17
Nakayama <sup>18</sup>	244	Lower third and cardia	—	—	25	—
Sweet <sup>33</sup>	85	Cardia	—	5	—	3%
	67 <sup>1</sup>	Cardia	—	44	—	34
Clagett <sup>35</sup>	33	Cardia	27	12	9	3

1. 'Curative', 2. Right thoraco-abdominal approach.

TABLE VI. RESECTABILITY RATES

Author	Total Cases	Situation	Resectability
Sweet <sup>28</sup>	17	Upper third	58%
Sweet <sup>28</sup>	120	Middle third	69%
Wu <sup>3</sup>	55	Middle third	50-9%
Sweet <sup>28</sup>	82	Lower third and Cardia	85%
Wu <sup>3</sup>	33	Lower third	81-8%
Garlock <sup>25</sup>	187	Cardia	45-4%
Wu <sup>3</sup>	38	Cardia	63-2%
Chauncey <sup>29</sup>	23	Cardia	82%

surely fall by the wayside through unrelated disease and illness. Garlock selects his cases carefully. A 5-year survival rate of 41.6% for lower third carcinoma cannot be matched by those of us who do not discriminate as he does (see Tables V & VI).

#### Assessment and Pre-operative Preparation

Apart from the routine assessment and preparation of any surgical case there are certain features which require special attention.

1. *Blood Chemistry.* Where there has been dysphagia of moderate or severe degree, nutrition is seriously affected. Blood proteins are deficient and serum and tissue electrolytes may be disturbed. There is often anaemia. Serum-protein estimations must always be made and operation deferred if there is diminution of the total serum-proteins or a disturbance of the normal albumin/globulin ratio. Where possible a high-protein diet of 2,500-3,000 calories daily should be given, with egg flips, meat and cheese and one of the common powdered protein foods, such as 'Procasenol'. Vitamins B and C must be given by mouth or by injection. Pre-operative blood transfusion should be administered even if the blood count is normal; the count may be misleading in the presence of haemoconcentration associated with dehydration, and also it has been shown that a condition of 'chronic shock' may exist in these patients, which is best combated by blood transfusion. Gastrotomy or jejunostomy may be necessary as a preliminary in order to facilitate the feeding of these cases. Often, however, oral feeds augmented by daily intravenous dextrose-water and amino-acid infusion for several days before operation will suffice.

2. *Local Toilet to the Oesophagus.* This is important should there be much retained material in the oesophagus which stagnates and putrefies, producing foul-smelling

eructation. The oesophagus should be carefully washed out for 2-3 days beforehand and oral antibiotics in the form of penicillin lozenges or streptomycin water given. These measures are necessary in order to minimize the chance of infection in the mediastinum and chest if the oesophagus has to be opened, and to lessen the oesophagitis which often exists as a result of the putrefaction within its lumen.

3. *Attention to the Lungs.* Breathing exercises and general limb exercises are very important; posturing may drain suppuration in the lungs. The sputum should be cultured and sensitivity tests done on the organisms so that an appropriate antibiotic can be prescribed. Post-operative cough is often very troublesome, exhausting to the patient and causing atelectasis of the lung if secretions accumulate. All these complications add to the length of convalescence and may leave permanent after-effects.

4. *The Anaesthetic.* This must be left to a competent anaesthetist. Many oesophageal surgical procedures are lengthy and many of the post-operative pulmonary and other complications can be avoided by a good anaesthetist.

#### SURGERY FOR CARCINOMA OF THE OESOPHAGUS AND GASTRIC CARDIA

In 1913 Torek<sup>14</sup> reported the first successful resection of carcinoma of the thoracic oesophagus. He used a right-sided approach and the patient died 12 years later from pneumonia at the age of 80. By 1937 no other 5-year survivals had been recorded. In 1933 Ohsawa<sup>39</sup> reported 8 cases, performing the first successful endothoracic oesophagogastric anastomosis.

In 1938 Adams and Phemister<sup>15</sup> reported the first successful resection of the lower oesophagus by oesophago-gastrostomy outside of Japan. In 1943 Garlock accomplished the first successful resection with oesophago-gastrostomy for carcinoma of the middle third of the oesophagus. In 1944 Sweet succeeded in performing a supra-aortic anastomosis.

In the earlier operations open anaesthesia was used without controlled respiration. The oesophagus was removed by transthoracic approach but continuity was established by designing a presternal skin or rubber tube and joining this proximally with the cervical oesophagus and distally with the stomach, or jejunal graft anastomosed to the stomach, as practised by Grey Turner and Torek. Later the stomach was used to bridge the gap by bringing it up to the neck through a subcutaneous tunnel. It is interesting to note that Radford<sup>18</sup> performed the first successful oesophageal resection without establishing continuity in South Africa in 1937. Since then the right transpleural approach (Ivor Lewis) has been popularized by Franklin and a left thoraco-abdominal approach carried out by others. Each has its advantages. All however are agreed that for carcinoma of the lower third of the oesophagus and gastric cardia a left thoraco-abdominal one-stage procedure should be employed, with the use of either a greater-curvature stomach tube to bridge the gap, or a jejunal graft or Roux-en-Y jejunal loop. For



carcinoma of the gastric cardia, where the lymphatic drainage runs along the fundal as well as the coeliac vessels, and drains to the lymph nodes along the splenic vessels to above the body of the pancreas, a large block-dissection should be effected with total gastrectomy and removal of the spleen and tail of the pancreas as well as the lymph nodes along the left gastric artery. Where the carcinoma is localized to the cardia it may be permissible to retain the pyloric antrum and use this for anastomatic purposes.

Nakayama<sup>16</sup> (Japan) advocates the right thoraco-abdominal approach for carcinoma of the middle and upper third of the oesophagus. Watson<sup>9</sup>, of the New York Memorial Hospital, also advocates a one-stage right thoraco-abdominal approach with one or two teams. Others, such as Sellors<sup>17</sup> and MacManus<sup>24</sup> recommend a two-stage procedure, the first a laparotomy with mobilization of the stomach, followed by a right-sided thoracotomy performed in the face-down position.

Up to the present I have used a left thoraco-abdominal approach in all cases. The aortic arch, however, is a source of technical difficulty, particularly if the carcinoma is situated under the arch, where mobilization may be difficult. This could be overcome by ligation of the upper intercostal vessels and mobilizing of the aortic arch. Approach from the right side only necessitates division of the azygos vein to provide access to a lesion at this site. If one were to contemplate the need to resect a segment of the aorta along with the growth the approach would have to be through the left chest. For mid-thoracic or upper thoracic oesophageal resection Conerly<sup>30</sup> makes an abdominal and anterior thoracic attack through the third space, with the patient lying supine, the right shoulder being slightly raised. Two teams can work simultaneously and the approach has the advantage that a cervical anastomosis can be carried out without turning the patient; also the diaphragm does not have to be incised.

#### RADIOTHERAPY

This is administered to cases of squamous-celled carcinoma of the oesophagus. Adenocarcinoma of the cardia rarely, if ever, responds to radiation; yet we have used it in some cases post-operatively. In assessing the value of the radiotherapy a variety of factors require consideration.

##### 1. Radiation Techniques.

Detailed discussion of this is beyond the scope of this paper, but as I see it there are 4 technical or anatomical approaches that are employed. The object in each is to provide a tumour-lethal dose at the site of the lesion as well as to include as much of the field of lymphatic drainage as possible. The difficulties are the great depth from the surface of most carcinomas of the oesophagus, with consequent extensive irradiation of the skin and all tissues in the path of radiation.

(a) *Teleradiation.* This is the form of therapy which has been most used, a dose of approximately 6,000 r being delivered to the tumour. In order to do this, multiple portals of entry have to be employed—4-8 fields, all converging on the tumour. In this way exten-

sive skin-necrosis is avoided. In Sweden the 'rotation' method has been used in recent years. In this the patient is rotated through 360 degrees. At the Johannesburg General Hospital during the last 2 or 3 years the grid system has been used. With this method 12,000 r skin-dose can be given to each of the 2 fields without severe skin-damage.

(b) *Intra-cavitary radiation* provides a high local dose without producing the severe constitutional disturbances that one often sees following teleradiation. For this, radio-active cobalt in a suitable container, or radium needles in a Levine tube or Souttars tube have been used here. The method of Zuppinger of intra-cavitary radiation plus teleradiation to the lymphatic field is a method we choose to use in those suitable cases in which surgery is contra-indicated and yet a long-term result is attempted. Intra-cavitary radiation generally succeeds in destroying the primary lesion. For this, a tumour dose of 6,000 r at 1 cm. is aimed at. Generally we use 4 x 5-mg. radium needles, left in position for 70-120 hours. The tumour disappears after this treatment, often leaving a circumferential fibrous cicatrix which may require frequent bouginage. The radiations, however, have no value in arresting the progression of metastatic lesions in the adjacent mediastinum. In very debilitated patients, or those already exhibiting evidence of distant spread of cancer, intra-cavitary radiation alone is employed. This improves the swallowing and enables the patient to live out his remaining days in greater comfort.

(c) *Radon seeds or radium needles* can be inserted into the tumour. This method has not been practised here, and because of the difficulty of access to the distal end of the carcinomatous stricture it is unlikely to be of much use. However for small local growths there may be a place for this form of therapy.

(d) *High-Voltage Radiation.* This is delivered through machines producing a voltage of one million and more. The practical and theoretical considerations do not differ much from those that obtain for teleradiation with the more commonplace apparatus, and in published series the results have not been any better.

##### 2. Palliative or Curative

While it may be true that frequently the radiotherapist is confronted largely with patients that have been considered unsuitable for surgery, this can only apply to cases of oesophageal carcinoma seen within the last decade; little surgery was undertaken for the radical cure of this lesion before that time. There has therefore been ample time in which to follow up the possible benefits to otherwise operable patients who were treated before the advent of the modern surgical techniques. Comparisons between the results of surgery and radiotherapy administered in recent years, unless in parallel series of cases, may be invidious. The figures to be presented later in this paper for survival rates in patients who received only radiotherapy were so disappointing that surgical attack on this cancer had become long overdue. Now that the operative mortality has been reduced to 10% and less, and because of the high percentage of resectable cases, radiation given alone as a

'curative' measure must take second place to surgery, unless and until better results from radiotherapy are achieved.

Radiotherapy as a palliative measure is invaluable. It will diminish the size of the growth, may destroy the primary lesion completely and reproduce a normal swallowing mechanism and remove all the distressing symptoms associated with the inability to swallow.

### 3. The Field Irradiated

Early spread of a mid-thoracic oesophageal carcinoma to the lymph-nodes at the gastric cardia and the coeliac axis has been demonstrated by many surgeons. In one of the cases in the series at present under review, where the primary growth was the smallest encountered, being no more than about 2 cm. in its longest diameter, and situated immediately below the aortic arch, and in whom there was only a 5-week history of symptoms, a malignant gland was removed at operation from the coeliac group of glands. In none of the cases I have encountered, which have received telerradiation to the mediastinum, was the epigastrium included in the fields. It would appear to me that if radiotherapy is to offer the same chance of cure as surgery, the whole of the mediastinum together with the epigastrium must be included in the field of effective radiation. This is a larger area than most radiotherapists are prepared to expose. I maintain also that if the combined results of surgery plus radiotherapy are to be improved, then this same large field must be given adequate irradiation. I am surprised at the few cases that I have found mentioned by a very large number of authors, in which Radiation was used as a supportive measure for surgery.

The results of radiotherapy have been appallingly bad (see Table VII).

TABLE VII. RESULTS OF RADIOTHERAPY

Author	No. of Cases	Survival Rate (Years)			
		2	3	4	5
Watson <sup>19</sup>	68 (receiving 'most recent' advances in therapy)	2	—	—	—
Buschke <sup>22</sup>	19 treated curatively (supervoltage machine)	5	—	—	3 (15.8%)
Scheel <sup>21</sup>	228 (ordinary roentgentherapy)	13%	1.8%	—	1.7%
Gynnings <sup>21</sup>	88	—	6	4	2 (3%)
Kohler <sup>23</sup>	296	3%	—	—	0.66%
Krebs <sup>24</sup>	217 (rotation technique)	80% mortality after 12 months			
Nelsen <sup>42</sup>	174 (rotation technique)	75% mortality after 12 months			
Frimann-Dahl <sup>36</sup>	41 early and small lesions (rotation technique)	No survivors after 4 years			

### RADICAL SURGERY OR RADIOTHERAPY?

The location of the tumour and its histological nature should be guiding factors in deciding what form of therapy is indicated. Other considerations are the general physical state of the patient and the presence of distant metastases or other constitutional diseases.

1. *Site of the Tumour.* Less than 10% occur in the lower hypopharyngeal and cervical oesophageal region. Surgery at this level often necessitates removal of the larynx and is very mutilating. It is generally conceded that radiotherapy offers less morbidity and quite as good a chance of palliation, if not cure. No cases of carcinoma of the cervical oesophagus were subjected to surgery in the present series.

Seventy per cent of oesophageal carcinomas occur in the upper 3/4ths of the thoracic oesophagus. For all of these lesions a supra-aortic or even cervical anastomosis should be performed. The mortality for this lengthier procedure is higher than for those lower down, and the early infiltration of the vital peri-oesophageal structures precludes the carrying out of radical resection in a greater proportion of cases. However, in those in whom no clinical spread outside the oesophageal wall can be found, the opportunity of surgical removal should be afforded the patient. Although intracavitary radium may sterilize the primary lesion, metastatic lymph-nodes respond less well to radiation. Good surgical dissection offers a better chance of removal of these lymph-nodes. For the remaining 20% that appear in the distal fourth of the oesophagus, and for all growths of the gastric cardia, surgery is without doubt the method of choice. Oesophageal carcinomata here, lying as they do in the loose areolar tissue of the mediastinum, invade vital structures much later. Their spread is proximally in the wall of the oesophagus and by lymphatic permeation to the glands surrounding the cardia, to those along the lesser curvature, and to the coeliac group of glands. Direct spread to the crura of the diaphragm is combated by excising the infiltrated portions *en masse* with the tumour. By performing a total gastrectomy the chance of recurrence in the gastric stump is obviated, although the use of a greater-curvature tube may at times be justified. Block removal of the lymphatic field is a relatively easy manoeuvre.

For adenocarcinoma of the gastric cardia radiotherapy is of little or no value, and a widespread block-removal of stomach, spleen, tail of pancreas and coeliac glands, together with an adequate amount of the distal oesophagus, offers the best chance of cure with the least operative mortality.

2. *Histology of the Tumour.* Surgery is the only effective weapon against adenocarcinoma of the cardia. This will apply also to the rare adenocarcinomas arising primarily in the oesophagus. Very anaplastic tumours metastasize early and results with both surgery and radiotherapy are disappointing. In many of these cases the symptoms have been of short duration. Conversely a long history in the presence of an operable growth is a good prognostic sign. Wu<sup>3</sup> found that most of the anaplastic growths occurred in the younger patients, and only 1 of 7 of his patients under the age of 40 was resectable, whereas his over-all resectability rate was 47.1%.

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3. *Age of the Patient.* The vast majority of the patients are over the age of 50. The operative mortality in Sweet's cases was found to increase with age. It was 6% for patients under the age of 45 and 25% for those over the age of 65 years. Old age alone, however, is not an absolute contra-indication and many successful resections have been carried out in patients over the age of 70. In my series 4 cases over the age of 70 were resected without any operative mortality.

4. *Other Disabilities.* Because of the old age of so many reported cases cardiovascular diseases are common, and by far the greater number of post-operative deaths are due to coronary thrombosis, pulmonary embolus, respiratory infection and focal necrosis of the stomach due to thrombosis occurring in the arterio-sclerotic gastric vessels. Five of my successfully resected patients had had other illnesses. Two had coronary thrombosis (one fibrillating at the time of operation), one diabetes mellitus, one cardiospasm, and one a slow-growing carcinoma of the breast with a large hard lymph-node in the axilla. She refused treatment for this lesion and 12 months later is well, with considerable regression of the breast tumour and its lymph-node.

#### DISCUSSION

What is the expectancy of life of a patient presenting with oesophageal carcinoma? Wu<sup>3</sup> found only 1 of 76 cases of non-resectable tumour alive after 6 months, while Parker<sup>7</sup> assessed the average survival rate from onset of symptoms in non-resectable cases to be 8 months. Stranahan *et al.*<sup>10</sup> reviewed 64 cases up to 1950 and found the average period of survivals for patients receiving X-ray therapy to be 5.2 months, while it was

6.3 months for those receiving no treatment and 9 months for those subjected to resection.

In considering the average length of survival of surgically treated patients, those dying directly as the result of the operation must be included. A reduction, therefore, in the operative mortality will increase this average length of survival. Improved operative technique, too, will reduce operative mortality and render radical surgical removal more effective. Nevertheless, in spite of this, an inevitable mortality must remain because of the old age of many of these patients, and deaths from coronary thrombosis will continue to take their toll. It is unlikely that earlier diagnosis will result in an appreciable increase in the proportion of resectable cases, unless the public themselves become more cancer-conscious, as they have done in the USA, and present themselves to their doctors sooner than they do. On the other hand much of the delay is the fault of the doctor. A common early diagnosis for post-cricoid carcinoma is hysteria, while many a patient presenting with an unaccountable cough has not had a barium swallow done to exclude oesophageal disease.

Garlock was unable to detect any relationship between the duration of the symptoms and the operability and resectability at the time of the operation. He thought the operability rate for carcinoma of the gastric cardia less than for carcinoma of the oesophagus, because of a tendency for the former to metastasize to the liver, and because fewer cases present in the first 3 months after the commencement of the symptoms. A study of the tables (Tables VIII-XI) of the various groups of cases (Groups I-IV) will give an indication of the ages, length of symptoms before admission, treatment and survival of all the cases where records are adequate.

TABLE VIII. GROUP I. CASES TREATED BY OPERATION

Case	Sex	Age	Duration of Symptoms	Site and Type of Growth	Operation	Remarks	Survival
20	M	64	4 m.	Sq. lower oes.	OG	glands	7 m.
24	M	54	2½ m.	Undifferentiated AC oes.	OGR	—	14 d.
25	M	61	9 m.	Sq. lower oes.	OG	glands	9 d.
31	M	58	9 m.	AC cardia	OGR	secondaries in paracolic gutter	6 d.
32	M	48	2 m.	AC cardia	TGOJ	no glands	13 m.
33	F	60	3 m.	AC cardia	TGOJ	no glands	3½ m.
34	F	58	6 m.	AC cardia	OGR	glands and secondaries in liver	4 m.
44	M	51	3 m.	Sq. mid-oes.	OGR	glands	6 d.
46	M	53	5 w.	Sq. mid-oes.	OGR	glands	10 d.
50	M	36	6 m.	Sq. mid-oes.	TL	Inoperable glands	13 d.
51	F	59	5 m.	Sq. lower oes.	L	liver secondaries	8 m.
55	M	79	4 m.	Sq. mid-oes.	ATR1	nil	2 d.
58	M	71	2 m.	Sq. lower oes.	OGR	glands	31 d.
60	F	46	3 m.	AC cardia	L	inoperable	no record
63	M	64	—	AC lower third	OGR	—	4 d.
64	M	48	4 m.	AC cardia	OGR	glands	4 m.
67	M	58	—	Sq. lower oes.	OGR	—	died on table
71	M	63	2½ m.	Sq. mid-oes.	ATR2	nil	5 d.
72	M	59	4 m.	AC cardia	OG	glands	no record
78	M	70	3 m.	Sq. lower oes.	TGOJ	no glands	7 m.

OGR=oesophago-gastrostomy with resection. TGOJ=total gastrectomy and oesophago-jejunostomy. TL=thoraco-laparotomy. ATR1=1st stage abdomino-thoracic resection. ATR2=2nd stage ditto. OG=oesophago-gastrostomy. L=laparotomy. AC=adenocarcinoma. Sq=squamous carcinoma. Oes=oesophageal. d.=days. w.=weeks. m.=months. y.=years.

In 20 cases there were 12 operative deaths (60%) and only 1 survived longer than 1 year. There is no record whether the lesion in cases 24 and 63 was primarily of oesophageal origin or gastric carcinoma infiltrating the oesophagus.

The length of survival after operation (where recorded—18 cases) was as follows (the bracketed figures represent deaths):

Months	..	..	..	..	..	0-3	3-6	6-9	9-12	12-15
Cases	..	..	..	..	..	0 (11)	0 (3)	0 (3)	0	0 (1)

TABLE IX. GROUP II. CASES TREATED BY OPERATION

Case	Sex	Age	Duration of Symptoms	Site and Type of Growth	Operation	Remarks	Survival
1	F	61	4 m.	Sq. lower third	TGOJ	and radiotherapy	alive after 17 m.
2	F	71	9 m.	AC cardia	OGR	glands present and Ca breast	alive after 15 m.
3	M	58	4½ m.	AC cardia	TGOJ	and radiotherapy	7 m.
4	F	50	5 m.	AC cardia	TGOJ	and radiotherapy	alive after 10 m.
5	M	60		Sq. mid-third	OGR	glands: radium	alive after 27 m.
6	M	67	8 m.	Anaplastic Sq. mid third	OG	inoperable	10 d.
7	M	46	1 y.	AC lower third	TGOJ	glands: radiotherapy	20 m.†
8	M	68	4 m.	AC cardia	Exploration only	inoperable	1 m.
9	M	67	7 m.	AC cardia	TGOJ	extensive direct spread	died on the table
10	M	47	3 m.	AC cardia	TGOJ	radium and radiotherapy	alive after 19 m.
11	M	70	*	AC cardia	OGR	no glands	15 m.‡
12	M	73	6 w.	Sq. mid-third	OGR	glands	10 m.
13	M	72	9 m.	Sq. lower third	OGR	double Ca: radium	4 m.
14	M	68	12 m.	Sq. mid-third	OGR	glands radiotherapy	alive after 3 m.
15	M	58	5 m.	Sq. mid-third	OGR	post-operative radium	21 m.
16	M	40	4 m.	AC cardia	Exploration only	inoperable	5 m.
80	M	51	1 y.	AC cardia	OGR		well 1 m. later

For index to contractions, see Table VIII.

\* Cardiospasm all his life. † Intestinal obstruction: no secondaries. ‡ Anastomotic recurrence.

In 17 cases there were 2 operative deaths (11·7%). In the 14 'curative' operations there was only 1 death (7%).

The time of survival after operation in the 17 cases was as follows (the bracketed figures represent deaths):

Months	..	..	..	..	0-3	3-6	6-9	9-12	12-15	15-18	18-24	27
Cases	..	..	..	..	1 (3)	1 (2)	(1)	1 (1)	0	1 (1)	2 (2)	1

Of the 7 patients who have survived more than 1 year, one died after 15 months from recurrence of growth at the anastomosis, one 20 months after operation from an acute intestinal obstruction, necropsy showing no evidence of cancer, and one of 'malnutrition' 21 months after operation. The last-mentioned was the only African in this series and was not attended medically for the last 14 months of his life.

TABLE X. GROUP III. RADIUM THERAPY AND INTRACAVITARY RADIUM ONLY

Case	Sex	Age	Duration of Symptoms	Intra-cavitary Radium	Teleradiation Tumour Dose	Survival after Admission
16	M	40	4 m.	6000 r		—
17	M	78	4 m.	5000 r		10 d.†
18	M	80	7 m.	5300 r	2 grids 5000 r	alive 13 m. later
19	M	79	5 m.	5500 r	2 grids 5000 r	alive 12 m. later
20	M	64	4 m.		multiple fields 1750 r	7 m.
21	M	71	14 m.	5000 r		9 w.
22	M	46	3 m.		4700 r	3 m.
23	M	78	3 w.		multiple fields 6500 r	2 w.
26	M	53	9 w.		3 fields 4500 r	4 m.
28	F	77	—		3 fields 5300 r	7 m.
35	M	57	18 m.		multiple fields to the neck	alive 4 m. later
36	F	47	6 m.	1000 r	8 fields 6000 r	—
37	M	74	18 m.	5000 r		6 m.
38	M	52	6 w.			8 m.
40	M	66	3 m.	4000 r		2 m.
42	M	76	9 m.	1500 r		6 m.
50	M	36	6 w.	1000 r		4 w.
52	M	64	2 m.	6500 r	2 grids 6000 r	6 m.
53	M	74	*		2 grids 6000 r	alive 23 m. later
57	M	68	3 m.		5 fields 5700 r	14 w.
62	M	55	10 m.		3 fields 4250 r	alive 6 m. later
69	M	77	—	5000 r	3 fields 4000 r	8 m.

\* Duodenal ulcer 5 years.

† Died of coronary thrombosis.

The length of survival after operation in the 20 cases that were traced was as follows (the bracketed figures represent deaths):

Months	..	..	..	..	0-3	3-6	6-9	9-12	13	23
Cases	..	..	..	..	1 (5)	2 (5)	(4)	1	1	1

Case 20 was subjected to operation and found to be unresectable, and a side-to-side oesophago-gastrostomy was performed. Case 16 was given intracavitary radium after exploration had demonstrated peritoneal secondaries. Case 50 was likewise subjected to exploration, having previously had intracavitary radiation. Cases 19 and 53, both of whom have done well with radio-therapy alone, had negative biopsies at oesophagoscopy, even though radiologically and on endoscopy they were thought to have carcinoma.



TABLE XI. GROUP IV. NO TREATMENT

## SUMMARY

Case	Sex	Age	Duration of Symptoms before Admission	Survival after Admission
21	M	71	—	2 m.
27	M	87	—	10 d.
29	M	61	3 m.	—
30	M	67	1 y.	—
39	M	78	3 w.	17 d.
41	M	73	5 m.	—
43	M	71	1 y.	—
45	M	83	1 y.	1 m.
48	F	58	—	—
54	M	80	months	10 d.
56	M	69	—	18 d.
59	M	79	4 w.	7 d.
60	F	46	3 m.*	—
61	F	75	2 y.	2 d.
65	M	80	9 m.	15 d.
66	F	63	7 m.	8 d.
68	M	81	6 m.	—
70	M	80	3 d.	4 d.
73	F	75	8 m.	2½ m.
74	M	80	10 w.	1 m.
75	M	80	2 m.	5 w.
76	M	69	3 m.	2 m.
77	M	64	1 m.	2 w.
79	F	33	5 m.*	6 w.

\* Laparotomy.

The length of survival after admission in the 17 cases that were traced was as follows (the bracketed figures represent deaths):

Months	0-3	3-6	6-9
Cases	(17)	0	0

It is astonishing that so many patients in Group IV should have been in such a debilitated state that many of them only survived a few days after admission. Could this be negligence?

It seems clear to me that some educational regime is necessary to make both patient and doctor more cancer-conscious, both as regards oesophageal cancer and cancer as a whole.

Comparisons in the results in the two surgical groups (I and II) are perhaps invidious. There are not enough cases presenting at our hospital for more than a few surgeons to develop technical skill in operating on this condition. The results of cases in Group III (those receiving radiotherapy) are hardly comparable; many of them were considered unsuitable for surgery.

I am sure that radiotherapy plays an indispensable part in the treatment of these patients, and many of mine have received radiotherapy after operation. Four cases of adeno-carcinoma of the gastric cardia have received radiotherapy to the epigastrium post-operatively, in spite of the fact that I am informed that radiotherapy is useless with these tumours. In 2 cases also in whom no post-operative telerradiation was administered I have given a post-operative intracavitary dose of radiation to the oesophagus extending for 5 cm. proximal to the line of anastomosis. This is done with a view to diminishing the possibility of recurrence at the anastomosis. Intracavitary radiation upsets the patient very little and I intend to continue its use.

The current trends of treatment of carcinoma of the oesophagus are reviewed. The results following surgery in some overseas clinics during recent years have been very encouraging and in those patients in whom a 'curative' resection has been carried out 30-40% 5-year survivals are recorded. The mortality has dropped from 50% to below 10% in the last 10 years.

Eighty cases that have been admitted to the Johannesburg General Hospital during the last 5 years are reviewed. The results of radiotherapy amongst this group are disappointing and the only 2 patients who have survived longer than a year gave negative biopsies at oesophagoscopy. There were 2 groups of surgically treated patients, one of 20 patients treated by various surgeons at the hospital, with a 60% operative mortality, and a second group of 17 patients treated by myself with 2 deaths, giving a mortality of 11.7%, or 7.1% mortality amongst the 14 'curative' resections.

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## A NEW METHOD OF THE MEASUREMENT OF OBJECTS BY X-RAYS WITH SPECIAL REFERENCE TO PELVIMETRY\*

J. S. COLLIER, M.B., CH.B. (CAPE TOWN), D.M.R.D. (LOND.)

*Durban*

In a world becoming daily more complicated and where complication is often admired for its own sake, one has increasingly felt the need to keep simple problems simple. The rectilinear propagation of X-rays and the simple geometrical relationship of object and enlarged image remain basically simple; but its application has at times become most involved and one puts forward yet another method of measurement by X-rays in the hope that its simplicity, accuracy, low consumption of time, and adaptability to any X-ray department, will be found useful. The method, while of general use for any X-ray measurement, is perhaps most useful when applied to pelvimetry. Another useful application has been in the assessment of shortening in a fractured leg—often a (literal) bone of contention—where a difference in the estimates of the amount of shortening has often wasted many hours of medico-legal time.<sup>1</sup> I have no doubt that many further uses will be found for the method—not necessarily in the field of medicine only. Accurate assessment in operative procedures for the lengthening and shortening of bones has already been found useful.

To return to the science of pelvimetry, I should like to quote E. Rohan Williams,<sup>2</sup> who says:

'The growth of the appreciation of the value of radiological study in this field has been unduly slow; until recent times there has been inadequate cooperation between obstetricians and radiologists. However, during the last few years, probably stimulated by the work of Caldwell, Moloy and Swenson, there have been welcome signs of increased cooperation and, especially since 1932, substantial contributions have been made to obstetric radiology. In spite of this progress, there is still a considerable residue of prejudice amongst some obstetricians against the use of radiological methods to help in the solution of some of the problems of disproportion. It is incumbent upon radiologists to prove to their obstetric colleagues the value of their methods.'

With this remark I am in the strongest agreement, and I feel that to some extent cooperation has failed because of needless over-complication of technique and mathematics, which bewilders students of radiology and must cause a mental resistance in the minds of the general practitioners, who are, after all, the doctors who must, in the final analysis, be the arbiters. I have

\* A paper presented at the South African Medical Congress, Pretoria 1955.

### POSTSCRIPT

Since this article was written the author has operated upon 5 more cases, performing resection in all, with high-level anastomosis in one. All survived without complications and at present all are alive and well, although 2 suffer from 'dumping' and one has required dilatation of the oesophago-gastric anastomosis. These cases bring the author's personal cases to 22 operations with 19 resections. There were 2 deaths, giving an over-all mortality of 9.2% and a mortality of 5.25% of the resectable cases.

found that, with his extra experience, the consultant is less likely to require pelvimetric aid—and yet it is often he who has recourse to it, knowing how valuable an accurate radiological assessment can be, as corroboration of clinical judgment. I feel strongly that a simple method which can be checked by the patient's practitioner himself can go far towards combating the suspicion with which X-ray measurements are undoubtedly viewed by many practitioners. The assessment and appraisal of the measurements can be complicated enough; let us therefore strive to keep the method of arriving at the necessary measurements simple and accurate.

Outside hospital practice, one cannot afford the numerous semi-luxuries which are paid for out of Provincial funds. I have therefore discarded both the normal and the precision stereoscopes, because the scope of these is too limited to allow of their being fully exploited in private practice. An article by Hodges and Nichols<sup>3</sup> describes use of a linkage pantograph in what they term 'orthographic pelvimetry'. This produces tracings of frontal and later views of the pelvis, on which the various diameters and dimensions can be measured without the aid of computations or special rulers. Their description covers, firstly, the use of a special tube carriage which produces 90° triangulation, the patient lying on her back throughout the procedure, and, secondly, the linkage pantograph which prepares the tracings from the films. No doubt the procedure has a high degree of accuracy in skilled hands, but my feeling is that no less accurate methods are available without the necessity for a room-full of expensive apparatus of most limited application. The preparation of tracings is time-consuming, laborious and subject to grave errors in unskilled hands. One therefore discards these expensive adjuncts required 'to produce measurements without computation', which nevertheless show that these authors, too, have revolted against unnecessary virtuosity in the use of the slide-rule or the electronic computer. Their method also makes the point of not approaching the patient unduly during the examination, which is perhaps one of the most important points in private practice.

In the method here described the radiographer, who

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in any case is required to palpate the patient for purposes of centring and aligning film, tube and patient during this part of the procedure, takes two simple measurements, viz. (1) from symphysis to table top in antero-posterior view, and (2) from mid-line to Bucky surface in lateral view. In good hands this is simple, quick, accurate and acceptable to the patient, who, anyway, comes expecting to be measured.

A further minor, but often irritating factor in X-ray measurements is the defacement of films by lines, angles, circles and various hieroglyphics in pencil, ink or, worst of all, grease pencil. My personal feeling is that these artificial markings tend to impair the assessment of the configuration of underlying bony structures of mother and foetus. The appraisal of the probable course of labour by the consideration of the X-ray films is after all the most important part of pelvimetry, which is never entirely a problem in applied geometry.

To summarize, the pelvimetric method here described

3. Simplicity, particularly the exclusion of unnecessarily complicated and expensive ancillary apparatus

4. The exclusion as far as possible of measuring instruments applied to the patient's body

5. Adaptability of the procedure to any normal X-ray machinery.

In addition, the method further allows for the easy re-check by the practitioner, if necessary, of any measurement. In addition, any diameter or distance not recorded in the radiologist's report can be measured directly.

#### APPARATUS AND METHOD

Fig. 1 shows a photograph of the apparatus required. This readily adapts itself to any normal X-ray machinery. It consists of 2 perforated steel rulers, moving at right angles to a vertical X-ray film in the upright Bucky stand, the distance of either from the X-ray film being individually infinitely variable. A modified later design has been produced, and will be marketed by

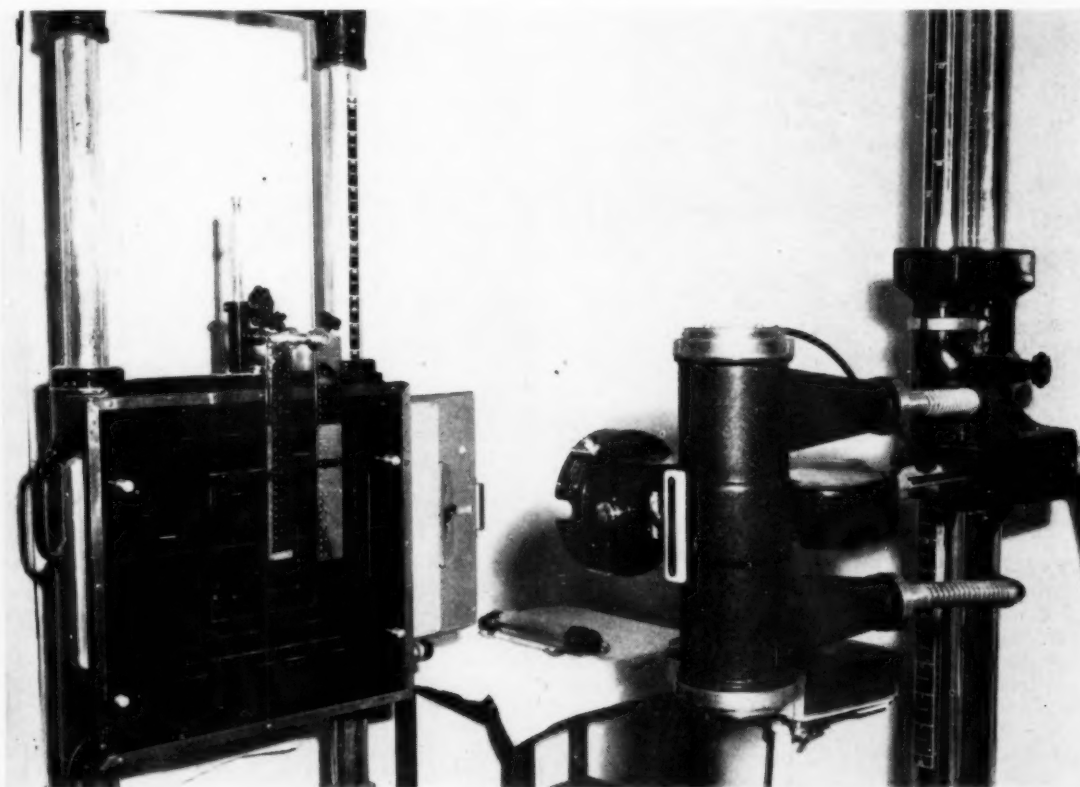


Fig. 1.

complies with the following requirements, which should be fulfilled by any pelvimetric method:

1. Accuracy of results
2. Shortest possible time for completion of procedure

certain firms, which has 3 adjustable rulers, since the points to be measured in pelvimetry as a rule fall into 3 distinct planes, viz. (1) the pelvic brim, (2) the mid-line of the body in the erect lateral film, and (3) the

bispinous diameter, measured also on the film of the inlet.

The normal films for pelvimetry are made, viz. (1) erect lateral, (2) pelvic brim, (3) pelvic outlet, and (4) plain abdomen. The last-mentioned film is for assessment of the lie and normality of the foetus, the characteristics of the maternal pelvis, and pathological conditions of soft tissue or bone of the foetus or the mother, etc.

The films are positioned in the accepted projections, viz. (1) pelvic brim parallel to film, (2) lateral accurately lateral to upright Bucky, and (3) pelvic outlet in contact with the X-ray film.

While positioning is being maintained for radiography, the following measurements are accurately taken: (1) from symphysis to table top in the brim position, and (2) from mid-line to Bucky in the erect lateral position. The distances between table top and film, and between Bucky and film are known, being easily measured.

On completion of these films, the patient is allowed to sit up and the rulers are moved to the following measurements on the scale:

*For brim film:* (symphysis to table top) + (table top to film).

*For lateral film:* (mid-line of body to vertical Bucky) + (Bucky to film).

The rulers are now exactly vertical and parallel to the film and at the exact distances occupied by the planes on which measurements are to be taken. An exposure is made and the resulting film cut into strips, producing two rulers with centimetre and/or inch scales, magnified to the same degree as the planes in the pelvis under consideration. Measurements are simply performed by superimposing these rulers upon the film, for which each scale is individually suited.

While the bispinous diameter is often assessed thus:

Bispinous diameter (magnified scale) ÷ Bispinous diameter (actual)

2

an added refinement has been produced on the later model. For this, a third ruler is used, also individually adjusted, which is accurately placed in the following manner. Knowing the symphysis to table top distance in actual measurement, and the relationship of the ischial spines to the symphysis and to the posterior margin of the sacrum in a plane at right angles to the brim of the pelvis, one can, from the lateral film, note with accuracy the exact position of the ischial spines between these two points. Simple proportion gives the exact position of the ruler and, after radiography in the usual way and production of the ruler, this is used directly on the film of the inlet, but for measurement of the bispinous diameter only.

While further use of this technique may show up disadvantages, it is seen that, for the purposes of measuring only, such things as compasses, perforated lead sheets, stereoscopes, pantoscopes, reconstruction charts, nomograms, transfer scales, plumbobs etc. are completely unnecessary. In fact, a further advantage over the modified Thoms method, previously used by the author, is immediately apparent. In that method, a

perforated lead sheet was fixed above the film to be measured, at the same height above the film as the plane in which measurements are being taken. A flash exposure then superimposed a series of dots over the film, giving a magnified scale as above. Diameters along the line of the dots could then be read off directly, but diameters at an angle to these lines necessitated the use of compasses, or strips of paper etc. In contrast, with the use of the transparent rulers produced by the method described in this paper, any unusual diameter or measurement may be made directly, so long as it lies in the plane for which it was produced.

#### COOPERATION WITH PRACTITIONER

The patient's practitioner receives therefore the standard views of the patient—unmarked by lines which he may not understand—and, in addition, 2 or 3 celluloid rulers prominently marked with the patient's name, the date and any other relevant information. Each ruler also bears prominently the inscription, 'Use in conjunction with A.P. film only' (or 'lateral', as the case may be).

In practice, I have found that this method has markedly increased cooperation. Most general practitioners check one's measurements at first. If his results agree with the radiologist's, a feeling of trust is engendered. If they vary, the radiologist is sometimes faced with an irate telephone call. Then follows a short discussion about the precise points from which measurements are taken—which will vary somewhat with the individual radiologist. Often too the practitioner likes to measure for himself some other diameters in which he has faith—which is often impossible in other methods.

The greatest advantage in practice is that the time taken to measure each diameter in centimetres and in inches is very drastically reduced—leaving consequently that much more time in which to give a painstaking and therefore more accurate prediction about the possible course of labour and its effect upon the mother and the child.

#### LONG BONES

In the measurement of long bones, the bone is placed parallel to the film—the distance from it does not matter, as long as it is accurately recorded. The film ruler is then made by placing the ruler in exactly the same relationship to the film as obtained in the radiograph of the bone; as described above.

In both pelvic and bony measurements, the accuracy of the method is increased in proportion as the tube-film distance increases. One has less latitude with pelves—being largely dependent upon the power of one's plant—but, in the measurement of bones, the use of tube-film distances of between 4 and 6 feet is regarded as advantageous.

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## A WORM IN THE EYE

## A FAMILIAR PARASITE IN AN UNUSUAL SITUATION.

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Honorary Director, Amoebiasis Research Unit,\*

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The presence of a worm in the orbit or its contents is an alarming presentation, but is not as uncommon as people in temperate zones believe. In Central Africa it is not uncommon for the wandering filaria, *Loa loa*, to migrate through the orbit or even the eyeball in the course of its migrations through the subcutaneous tissue. This worm is the cause of Calabar or fugitive swellings and is transmitted by the mango fly, *Chrysops*. The adult *Loa loa* does not as a rule do a great deal of damage but, on the other hand, another filarial worm *Onchocerca volvulus* is sometimes known as the blinding filaria because the migrations of its microfilariae frequently damage the eyeball beyond repair. In endemic zones such as the South Kavirondo district of Kenya it is by far the commonest cause of blindness. It is transmitted by the bite of the buffalo gnats, *Simulium damnosum* and *S. neavei*. Other filarial worms have also been found in the eyeball. One reported from Durban by de Meillon and Gillespie (1943) was considered to be possibly *Filaria conjunctivae*, Addario, 1855. The oriental eye-worm, *Thelazia callipaeda*, Railliet and Henry, 1910, commonly parasitizes the conjunctival sac of the dog, and its American counterpart *Thelazia californiensis* has been found in the cat, sheep, deer, and black bear. Human infections have been reported. These worms are up to 17 mm. long by 0.85 mm. in diameter.

The larval forms of some of the tapeworms may be found in the orbit. In the Cyclophyllidean tapeworms such as *Taenia solium*, the pork tapeworm, or *Echinococcus granulosus*, the cause of hydatid disease, the larval form is cyst-like, in the first case being a cysticercus and in the second being a hydatid. In the Pseudophyllidean cestodes (of which the most familiar is the broad fish-tapeworm, *Diphyllobothrium latum*) larval forms may occasionally enter the orbit. In the East the custom of applying a freshly opened frog to a sore eye may transmit the larval form, known as a Sparganum, of *Diphyllobothrium mansonii*. The definitive host of this worm is a carnivore, such as a tiger, cat or

dog, the first intermediate host is a *Cyclops*, and the second intermediate host is usually a frog or a water-snake. This Sparganum may be transmitted mechanically from the second intermediate host to man. Myiasis of the conjunctival sac, due to the larval stages of 'filth flies' is more common in animals than in man, but cases are reported of eye invasion by *Hypoderma bovis* and *H. lineata* (the warble flies), *Oestrus ovis* (the sheep nasal fly) and others.

All these possibilities had to be considered in the present case.

## CASE HISTORY

A female African child, aged about 18 months, was seen in the Casualty Department of King Edward VIII Hospital, Durban, on 15 February 1956. The mother stated that the child had 'a worm in her eye'. On examination it was seen that there was 'about half an inch of worm' protruding from the upper punctum of the right eye. The visible portion of the worm was in active motion, but showed no actual progressive movement. The worm was grasped with forceps and gently extracted. Examination of the eye showed there had been no damage to the eyeball or lacrimal canaliculus and there was, in fact, neither swelling nor other reaction in the area.

As no preservatives had been applied, the worm was rather dried out when it reached the laboratory some 20 hours after it had been extracted. After clearing in lactophenol and mounting, the worm was found to be round, unsegmented, fawn in colour, just under 5 cm. long, and about 1 mm. at its greatest diameter (Fig. 1). On microscopy, the anterior end and a further short section were found to have been damaged. This interfered with identification. The oesophagus had been everted and the oral labia were completely distorted. A further area, approximately at the junction of the anterior and middle third was damaged, just at the point where one might expect to find some sexual rudiments. The posterior end of the worm was not recurved, but showed a subterminal anus and a single pair of papillae, but no spicules (Fig. 2). The integument appeared cuticular and transversely striated. The size and general characteristics of the worm eliminated several possibilities. Firstly, the worm being round and unsegmented eliminated the possibility of either a dipterous larva or a Sparganum. Of the nema-

\* The Amoebiasis Research Unit is under the joint sponsorship of the South African Council for Scientific and Industrial Research, The Natal Provincial Administration, and the Department of Medicine, University of Natal, Durban.

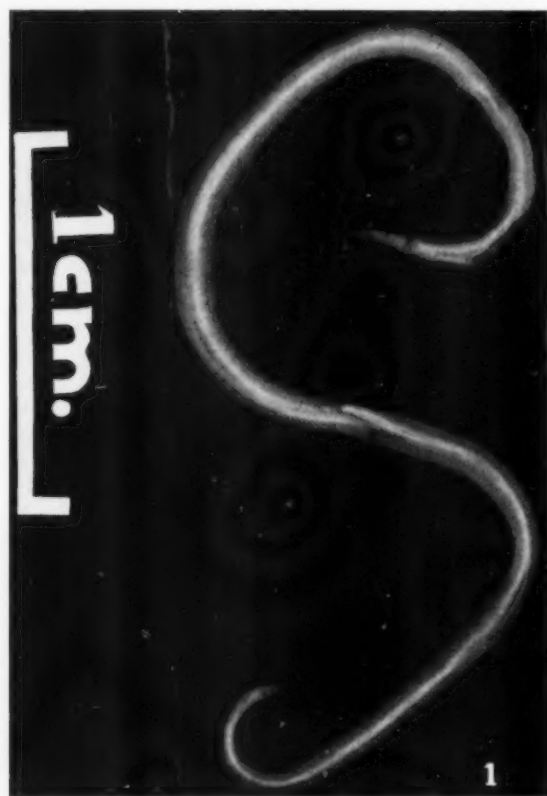


Fig. 1. Photograph of the worm after removal from the eye.

todes the only ones of appropriate size were either *Loa loa* or a small *Ascaris*, though the worm was rather too large for the former. Comparison of the specimen with *Ascaris* obtained from the autopsy room confirmed the diagnosis as an immature female *Ascaris*. The integument and its markings and the post-anal papillae were the distinctive points of agreement.

Though in the course of its life cycle, the larval forms of *Ascaris* do pass through a tissue migration and have been reported from the anterior chamber of the eye (Faust 1955), it is unlikely that an *Ascaris* could have developed from the larval stages in the present position. It is far more likely that this particular specimen migrated from the intestine. The wandering habits of *Ascaris* are well known and are particularly likely to occur when the worms have been irritated by the administration of some anthelmintic such as carbon tetrachloride. In this case, the worm had obviously been regurgitated through the stomach and oesophagus to the region of the nasopharynx, whereafter it entered the opening of the naso-lacrimal duct and moved into the lacrimal sac. From there it entered the upper lacrimal canaliculus and was emerging from the upper punctum when it was removed. According to Gradwohl



Fig. 2. Posterior portion of worm, showing a papilla.

and Kouri (1948) *Ascaris* has not only been reported from the lacrimal duct as in this case, but also from the eustachian tube.

#### SUMMARY

A case is reported in which an immature *Ascaris* appeared through the lacrimal canaliculus.

We should like to thank the Superintendent of the King Edward VIII Hospital for permission to publish this case and also Mr. C. R. Stuart of the Department of Pathology, University of Natal, for the photographs.

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## THE EFFECT OF SOCIAL AND ECONOMIC CHANGES ON THE PROFESSION OF MEDICINE

AN EXTRACT FROM THE PRESIDENTIAL ADDRESS \* OF SIR RUSSELL  
BRAIN, BART., M.A., D.M.

*President of the Royal College of Physicians of London*

It is a commonplace that the most important function of this College is to maintain the standards of medicine, but it is useful sometimes to consider what that implies today. Before the 1914 war, even before the 1939 war, it was a comparatively simple task, concerned almost entirely with standards of undergraduate and postgraduate education and qualifications, and to a less extent with the encouragement of research. The conditions under which doctors worked could be taken for granted, for they had not changed substantially for a century.

Now we can no longer take them for granted, and we are beginning to realize that standards of medicine do not depend entirely upon academic factors; they are the fine flower of a plant which has its roots in economic and social conditions, and we cannot continue to enjoy the flower unless we pay attention to the soil.

What has made this immediately obvious, of course, is the National Health Service, but if we are to diagnose our present ills correctly we need to take a much broader view.

It is inherent in national planning that no plan can be adequate. National affairs are so complex, and in these days so rapidly changing, that no planner can be aware of all the factors concerned in his problem, or foresee all the effects of his planning. A glaring example of this is the gross underestimate of the cost of the National Health Service; another is the still unsolved registrar problem.

The aim of those, of all political parties, who launched the Health Service, was to provide the best available medical facilities for the whole population, and this implies the best standards of medicine. But which politician stopped to consider, or even was capable of considering, all the effects of the Health Service upon the conditions of the doctor's work?

But the introduction of the National Health Service was only part of a social and economic revolution which, in other ways, has profoundly affected the status of the doctor. Some of the economic changes have recently been discussed in the press—the unprecedentedly high level of taxation and estate duties, the redistribution of the national income and the great fall in the value of the pound.

The changes resulting from the introduction of the National Health Service have been equally far-reaching. I will deal only with hospital medical staffs. Consultants are now paid for their hospital work, and they are also entitled to a pension, to which they themselves contribute, but against this must be set the decline in private practice and in the possibility of saving for the future.

\* London, 26 March 1956.

Moreover, few consultants will have earned a pension of any substance for another 10 or 15 years, and the fall in the value of the pound means that their own superannuation contributions are a steadily depreciating investment.

Hospital residents and registrars are now paid salaries which are much larger than was the practice before the war, but the rise in the cost of living has swallowed up much of the apparent increase, and we must not forget that the lean years which many physicians endured a quarter of a century ago, while waiting to start consulting practice, were often possible only because they or their parents had capital.

Two main causes seem to me to have operated in varying degrees at different times to bring about the present state of affairs. The first is obviously the State's increasing need for money to pay for the war, armaments and the welfare state, and when the State needs money it takes it where it can find it without giving much thought to the long-term social consequences. The second cause is the conscious attempt on the part of some people to achieve a classless society.

It is an act of faith, however, that the professions so essential to the welfare state would flourish in such a society, for in the nature of things there can be no evidence for this. Hence, whatever our political convictions, we ought surely to try to answer the question what are the social and economic conditions necessary to maintain the standards of medicine.

The first obviously is that the life of a doctor must continue to attract men and women of good intelligence and high character. State-provided higher education has opened the door of the medical profession to all who reach the necessary educational standards—medicine in this sense is a classless society—but the training is still long and arduous, and would-be doctors naturally ask themselves how medicine compares with industry and technology in the chance it offers of earning a good salary in a reasonable time.

How many young people choosing a profession look at the remotely glittering prizes? They ask when they can afford to get married. Hence the salaries of residents and registrars, as well as the rewards of general practice or consulting work, are a most important factor in attracting the right people into medicine at a time when the competition, especially of applied science, is great and growing.

I think we should all agree that the consultant requires work unhampered by direction, security, a reasonable freedom from anxiety about the future, enough money to buy books and journals and to belong to medical societies, some leisure both to enjoy

himself and to think, the opportunity to travel and meet his colleagues abroad and, many would add, the means to educate his children as he wishes, and to make some provision for their future.

Is this asking for special privileges, or merely defining the civilized life, in which we may hope an increasing number will share? If it is a reasonable claim, and if the standard of medicine cannot be maintained on much less, we should judge the policy of any government, as far as medicine is concerned, by asking not merely whether it provides the best hospital facilities or health centres, but also whether it enables medicine to attract the best students, and doctors to give of their best. This is a test which only the medical profession itself can apply. But, clearly, in considering the interests of medicine, we must always avoid a narrow sectionalism, and be prepared to subordinate our own demands to the needs of the nation as a whole; indeed, it is obvious that no profession can have satisfactory conditions apart from a stable national economy.

## SOUTH AFRICAN OBSTETRICS AND GYNAECOLOGY

JAMES BLACK, M.D., F.R.C.O.G.

*Chairman, South African Regional Council, Royal College of Obstetricians and Gynaecologists*

After expressing his appreciation of the honour he had received in being nominated and accepted as the first Chairman of the South African Regional Council of the Royal College of Obstetricians and Gynaecologists, Dr. Black said:

Since its establishment the Royal College of Obstetricians and Gynaecologists has played a great part in improving the maternity services in Great Britain and (through its Regional Councils) in Australia, Canada and New Zealand. It has secured better training for students and set a standard for postgraduate training for specialism which has never been attained before. In all obstetrical problems the Government of Great Britain now relies upon the Royal College for advice.

In Great Britain 25-40 years ago the maternal mortality rate varied from about 4 to 7 per 1,000 live births and puerperal sepsis accounted for 30-40% of this mortality. Maternal mortality is now down to about 0.75 per 1,000 births, and deaths from puerperal fever have almost disappeared. The greatest credit for this wonderful improvement must go to the discovery of the sulpha drugs and penicillin. Still, deaths from other causes associated with child-bearing have also been reduced in recent years, and much credit must be accorded to the Royal College of Obstetricians and Gynaecologists for the pioneer work they have done in drawing the attention of the various governments to the need for improving the maternity and infant welfare services of the country.

### SOUTH AFRICAN MATERNAL AND INFANTILE MORTALITY

Turning to South Africa, we have much to be proud of in many ways but much to be ashamed of as well.

For our European population the figures of maternal and infantile mortality compare favourably with overseas countries. In 1951 (the latest figures I have) the maternal mortality rate was 1.12 per 1,000 live births—a contrast to that of 1926 when it was 4.56. Deaths from puerperal sepsis have practically disappeared.

The infantile mortality rate under 1 year also shows a remarkable improvement. In 1920, the rate was 90 per 1,000 live births and in 1951 it was 33—a reduction of almost two-thirds; and, in the annual report of the Department of Health for 1952, figures given for 12 countries show that this rate was bettered only by New Zealand (28) and Australia (29).

In Asiatics and Coloured there has also been a definite improvement, but nothing approaching the European rates; in 1951 the maternal mortality rate among Asiatics was 2.71 and amongst the Coloured 2.49—both almost 2½ times greater than that among the Europeans. The infantile mortality rates in 1951 for Europeans were 33, for Asiatics 62.5 and for Coloured 124.

These are figures of which we cannot be proud, and this state of affairs is something which I hope this Regional Council and the Society of Obstetricians and Gynaecologists will investigate and endeavour to improve.

If you ask why the College should concern itself with these matters, I will give you two reasons. The first is that, while it could survive on its traditions, it can thrive only if it draws life from the world of today, and here the law of natural selection still operates. The College of Surgeons is developing as a post-graduate teaching institution; the universities are displacing our Conjoint Board undergraduate qualification; the B.M.A. would gladly speak for the whole profession in negotiations with the Government. Our future as a College, therefore, depends on our continuing to concern ourselves with every impact of national affairs upon medicine.

The other reason is that we have a contribution which no other body can make, if we use to the full our unique resources—the wide scope and representative character of our Fellowship coupled with the flexibility which our predecessors so wisely gave to our administration. For the great need in medicine today at all levels is integration, and without a comprehensive view there can be no adequate leadership.

### MIDWIFERY IN NATIVES

You will notice that I have quoted no statistics regarding Bantus. Why? Because there are no statistics on which we can rely; but I can state definitely that the maternal and infantile mortality rates are much greater than those I have quoted. This will be confirmed by any medical man who has worked in Bantu areas. Specialist Obstetricians who have worked in Native maternity hospitals will also confirm my experience that far more difficult midwifery is met with amongst the Bantu than amongst the Europeans.

There is a common belief, even among some of our legislators apparently, that Bantu women have no trouble in giving birth to their babies. This, I assure you, is a travesty of the truth and I hope our Societies will be able to dispel this ignorance and so pave the way for improved maternity services for the Bantu. I have seen some Native maternity hospitals or departments of which I am extremely proud; but I have seen some others where there is certainly no reason for pride.

I have always been keen to bring about an exchange of trainees in obstetrics and gynaecology between this country and Britain and the Dominions, and I can never forget the remarks of a well-known obstetrician in London when I was discussing this problem with him in 1946. 'What can you teach them?' was his first remark. I then pointed out, among other things, the experience his trainees from Britain would obtain in difficult midwifery among the Natives here and in the operative treatment necessary to repair the damage resulting from the complete lack of medical attention in many cases. 'Oh, we should call that bad midwifery', he said. There is the rub; we are very far away yet from the obstetricians' ideal, which is to see at the end of every pregnancy 'a healthy mother and a healthy child'. Owing to our distances and to the fact that we are dealing with a primitive race, our difficulties in reaching that ideal are far greater than those in Britain, but we must press on and gradually develop our maternity services till that ideal is reached. And here I would like to say that our legislators can do more to reduce the maternal and infantile mortality than we obstetricians can, for what would assist more than anything else is better nutrition, better housing, better education and less poverty.

It is time to say that all Native maternity hospitals are overcrowded to a dangerous extent. To have a number of mothers (I have heard of 12 or more) being delivered in one labour ward is revolting to our sense of decency. Mothers fulfilling their greatest function in life deserve better of us.

It is difficult to get statistics regarding the Bantu; and we obstetricians should collect what reliable statistics we can from the various provincial and mission hospitals so that we may have some idea of the maternal and infantile balance sheet; for to my

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mind a balance sheet of a country's health is as important as a balance sheet of its finances.

Another difficulty is to provide sufficient maternity beds for the Bantu; we all know how hospital-minded the Bantu have become during recent years and how difficult it is to keep pace with the demand. Still we must press on towards the mark. I should like to see an investigation made into the maternity services of the country with a view to providing the best practicable service for each particular area. In my opinion it is advisable to appoint a man of considerable experience to act as Director of a Division of Maternity and Infant Welfare.

#### IMPROVED TRAINING IN OBSTETRICS

Another point I have always stressed is that in this country our students and interns require a more advanced and longer training

in obstetrics than students in Britain, where a doctor is never so far away that he cannot obtain the assistance of an expert. In South Africa if he practises in the country he never knows when he may have to tackle an emergency on his own, no assistance being available. Practical postgraduate courses are also very necessary for men working in lonely places.

I have given a brief survey of some of the problems with which South Africa is faced on this question. There are many others which I cannot touch on; but I hope I have made those of the public who are here today realize that concerning maternity problems one might with truth apply Rhodes' last words, 'So little done, so much to do'. I have also tried to give you some idea of the lines along which we obstetricians intend to work to attain the ideal of 'a healthy mother and a healthy child'.

### MEDICAL HOUSE (PTY) LIMITED : REPORT OF THE DIRECTORS

The following directors' report was submitted and adopted at the annual general meeting of Medical House (Pty.) Limited, held on 1 August 1956 at Medical House, 35 Wale Street, Cape Town:

To the shareholders; your directors have pleasure in submitting their report together with the audited accounts for the financial year ended 31 December 1955.

1. The company's authorized and issued capital remains unchanged at 5,100 shares of £1 each fully paid up.

2. The nett profit of your company for the year ended 31

December 1955 amounts to £257 12s. 11d. which, added to the balance brought forward from the previous year, leaves a credit balance of £563 15s. 6d., to be carried forward to the following year.

3. The practice of the past in paying no directors' fees has been adhered to.

4. During the financial year under review no changes took place in the directorate of your company.

Signed on behalf of the Board

J. S. du Toit

### INAUGURATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF SOUTH AFRICA

The first Annual General Meeting of the College of Physicians and Surgeons of South Africa was held on Monday and Tuesday 6-7 August 1956 in Johannesburg, at Medical House, Esselen Street, Hospital Hill, and was followed by the first meeting of the

Council of the College. The Inaugural Ceremony took place on Wednesday 8 August in the Great Hall of the University of the Witwatersrand, Johannesburg.

#### ANNUAL GENERAL MEETING

The annual general meeting opened at 2 p.m. on Monday and was continued on Tuesday morning, ending by noon.

Dr. A. W. S. Sichel, Chairman of the Steering Committee, presided. Mr. T. B. McMurray, Hon. Secretary of the Steering Committee, presented his report, as follows:

##### Honorary Secretary's Report

The Federal Council of the Medical Association of South Africa, in 1951, set up a Committee to go into the question of the formation of a College of Physicians and Surgeons of South Africa. The Members of the Committee were Mr. L. B. Goldschmidt, Mr. M. Cole Rous, Mr. H. Muller, Dr. D. P. Marais, Mr. R. Lane Forsyth, Dr. A. H. Tonkin and Dr. A. W. S. Sichel. This Committee prepared a Draft Constitution for the College and made plans to admit Foundation Fellows and Foundation Members to the College. The last meeting of the Committee was held on 21 April 1954, and up to that date they admitted 290 Founder Fellows and 110 Founder Members.

The Inaugural Meeting was then held at Medical House, Esselen Street, Hospital Hill, Johannesburg, on 3 and 4 May 1954, and at that meeting it was decided that certain radical changes should be made in the Constitution and the lists of the College should then be opened again to admit further members.

A Steering Committee was set up to carry out this programme, consisting of the following members: From the Cape Province Dr. A. W. S. Sichel (Chairman), Mr. M. Cole Rous (Vice-Chairman), Mr. T. B. McMurray (Hon. Secretary), Dr. A. H. Tonkin, Mr. A. J. Helfet and Mr. J. A. S. Marr. From the O.F.S. Dr. Raymond Theron and Dr. S. Goldberg. From Natal Dr. J. S. Collier, Dr. B. W. Crowhurst Archer, Dr. W. R. Philipps, and Mr. A. G. Sweetapple. From the Transvaal Mr. W. Kark, Dr. T. Schneider, Dr. Maurice Shapiro and Dr. S. C. Heymann.

In view of the fact that most of the work would involve alterations to the Constitution, it was decided that Cape Town members of the Steering Committee should be the Executive and they should

confer with Mr. Boehmke, legal adviser, to make the necessary changes in the Constitution and to register the College as a non-profit-making Company.

*Alterations to the Constitution.* Twelve meetings of the Cape Town members of the Steering Committee were held between 19 May 1954 and 28 January 1955, in order to alter the Constitution. The following alterations were made:

(a) *Founder Fellows—Founder Members.* In accordance with the directions of the Inaugural Meeting, Founder Fellows and Founder Members were classed as one group called Founders, and those entering the College following its incorporation as a Company would be called Associate Founders.

(b) *Election of Council.* The Council would be elected by means of a closed ballot but, in order to secure representation of all the Provinces in the Union, it was decided that no Province should have more than 5 members on the elected Council nor less than 1 member on the Council; also it was decided that not more than 3 places on the Council should be given to Associate Founders.

(c) *Continuation in Office of the Steering Committee.* It was also arranged in the Constitution that the Steering Committee should remain in office until the election of the first Council, which would have to take place not more than a year following incorporation of the College as a Company. Your Steering Committee were to organize the election and hold office until the close of the first Annual General Meeting, when the first Council would take over.

Two meetings of the full Steering Committee were held, when members from other parts of the country travelled to Cape Town in order to be present.

*The Incorporation of the College.* The College was duly incorporated as a non-profit-making Company on 21 July 1955, and from that moment Associate Founders were accepted. Notices were inserted in the *South African Medical Journal*, and this resulted in 266 Associate Founders joining the College between 21 July 1955 and the closing date, 17 January 1956.

*Obstetricians and Gynaecologists.* Owing to some difference of

opinion the Executive of the Steering Committee met a Committee of Obstetricians and Gynaecologists at a meeting in Cape Town on 22 January 1955. At this meeting certain differences were resolved and at a subsequent meeting of the Obstetricians and Gynaecologists they decided that they would join the College and take part in its formation.

**Election of Council.** Following the incorporation of the College, the Executive of the Steering Committee continued in office, arranging for the printing and translation of the Constitution and the election of the College Council. The election was held on 29 May 1956 and this resulted in a return of 432 voting papers, including 27 spoilt papers. The result was declared on 5 June 1956 and the following were elected: *From the Cape Province*, Prof. J. F. Brock, Prof. F. Forman, Mr. A. J. Helfet, Mr. T. B. McMurray and Dr. A. W. S. Sichel. *From Natal*, Mr. A. G. Sweetapple. *From the O.F.S.*, Dr. R. Theron. *From the Transvaal*, Prof. G. A. Elliott, Mr. J. A. Douglas, Dr. S. C. Heymann, Mr. W. H. D. Trubshaw and Mr. M. M. Suzman.

Since the time of incorporation until the present date there have been 10 meetings of the Executive of the Steering Committee.

**The Examinations and Credentials Committee.** Your Committee decided that there should be a small standing committee of the College called the Examinations and Credentials Committee, who would be appointed by the President and Council to carry out the work of organizing examinations and laying down the relevant regulations.

**Faculties and Divisions.** Your Committee decided that separate Faculties and Divisions should be formed within the College and, on proposals being invited in this matter, all the specialties have so far seen their way to propose either separate Faculties or a Division.

**Finance.** You will see by the Balance Sheet how the money of the year was spent. Investments have been placed in Barclays Bank and Building Societies and it has been decided that an annual subscription of 5 guineas be levied on all Founders and Associate Founders in order to provide for the running of the College.

**Goodwill from Overseas.** We have received congratulatory messages from the College of Surgeons, Edinburgh; The College of Surgeons of England; the College of Surgeons of Australasia; the College of Physicians of England; the college of physicians of Edinburgh; the College of Obstetricians and Gynaecologists of England; the College of Surgeons in Ireland; the College of Physicians of Australasia; the College of Physicians and Surgeons of Canada.

Sir Walter Mercer, the President of the College of Surgeons of Edinburgh has graciously consented to visit us for the Inauguration and to take part in the Inauguration Ceremony to be held on 8 August 1956.

I am sorry to record the death of Mr. M. Cole Rous which left a vacancy in the Executive of the Steering Committee. By a unanimous vote of the whole Committee Dr. A. Landau was elected in his place. I am also sorry to record the death of Mr. L. B. Goldschmidt, the Chairman of the original Committee set up by Federal Council to institute the formation of the College. The work of these two practitioners was invaluable in the early stages of the formation of the College.

Your Committee is pleased to record the valuable help given by

Mr. H. Boehmke, whose cooperation and unending patience have been responsible for perfecting Constitution of the College.

#### *Accumulated Funds*

The audited accounts of the College, which Mr. McMurray presented, showed that the accumulated funds at 31 May 1956 amounted to £23,034.

#### *Resolutions*

The following resolutions were passed, as recommendations to the College Council.

**Divisions and Faculties.** That the Council of the College shall as a matter of urgency investigate and define the divisions and faculties\* to be set-up in the College. The terms of reference in regard to this matter shall include the constitution and titles or names of such divisions and faculties, the interrelationship and the scope and extent of their activity, the degree of their autonomy, and the diplomas, together with the initials describing such diplomas, that such sections of the College might wish to foster and establish.

**Division of Obstetrics and Gynaecology.** That a separate division of Obstetrics and Gynaecology be formed within the College.

**The Name of the College.** That the Council of the College appoint a subcommittee to investigate the desirability of changing the name of the College and to report back on the matters to the second Annual General Meeting.

**Headquarters.** That any decision regarding the situation of the Headquarters of the College be left to the Council with the recommendation that the Council seeks the views of the Founders and Associate Founders on this subject.

**Coat of Arms.** That the Council make application to the College of Heralds in London for the granting of a Coat of Arms to the College of Physicians and Surgeons of South Africa.

**Ceremonial Robes.** That the College of Physicians and Surgeons of South Africa adopt its own ceremonial robes for the President, the Officers of Council and future Fellows.

**College Journal.** That the College shall investigate the question of founding a Journal for the College of Physicians and Surgeons.

**Proposed Amendments to Articles of Association.** (1) Amend Article 33 to read: 33. No person who is not a Founder, Associate Founder and/or Fellow shall have a vote either at a show of hands or a poll, but unless and until the Founders, Associate Founders and/or Fellows present express a contrary wish, Members may nevertheless take part in discussion to such extent as the Chairman of the relative meeting may regard as reasonable.

(2) Amend Article 34 to read: 34. On a show of hands every Founder, Associate Founder and Fellow present in person shall have one vote, and at a poll every Founder, Associate Founder and Fellow present in person or by proxy shall have one vote. No Founder, Associate Founder or Fellow present only by proxy shall be entitled to vote on a show of hands.

\* The following Faculties were mooted: *Surgery*—Faculties of Neuro-Surgery, Otorhinolaryngological Surgery, Plastic Surgery, Orthopaedic Surgery, Ophthalmic Surgery, Thoracic Surgery, and Urogenital Surgery, and a Faculty of Anaesthetists. *Medicine*—Faculties of Paediatrics, Neurology, Radiology, Physical Medicine, Dermatology, Pathology, and Psychiatry.

## MEETING OF COUNCIL OF COLLEGE

The College Council met on Tuesday morning and afternoon and Wednesday morning.

Prof. G. A. Elliott, Professor of Medicine, University of the Witwatersrand, was elected as President of the College and Dr. R. Theron (Bloemfontein) and Mr. A. G. Sweetapple (Durban) as Vice-Presidents (senior and junior). Mr. T. B. McMurray (Cape Town) was appointed as Registrar, Dr. A. H. Tonkin (Cape Town)

as Treasurer, Mr. A. Helfet (Cape Town) as Librarian, and Mr. W. Kark (Johannesburg) as Chairman of the Examinations and Credentials Committee. Dr. Tonkin and Mr. Kark are accordingly *ex officio* members of the College Council.

Sir Walter Mercer, President of the Royal College of Surgeons, Edinburgh, was elected the first Honorary Fellow of the College.

## INAUGURAL CEREMONY

At the Inaugural Ceremony, which took place at 8 p.m. on Wednesday, Prof. G. A. Elliott presided and more than a thousand people attended. Academic dress was worn and the Council, together with other members of the Steering Committee, speakers

and guests, walked in procession on entering and leaving the hall. His Worship the Mayor of Johannesburg (Councillor L. V. Hurd, J. P.) in an address welcomed the new College in holding its inaugural meetings in that city.

Mr. F. Silk, Chief Magistrate of Johannesburg, called on the President, vice-Presidents, Treasurer and Registrar to make the declarations required of them.

Sir Walter Mercer, President of the Royal College of Surgeons, Edinburgh, and first Honorary Fellow of the College of Physicians and Surgeons of South Africa, delivered a congratulatory address, at the conclusions of which he performed the ceremony of installing Prof. G. A. Elliott as President of the College of Physicians and Surgeons of South Africa.

The following congratulatory messages were also presented: By Prof. C. F. M. Saint for the Royal College of Surgeons of England; by Prof. F. Forman for the Royal College of Physicians of London; by Mr. T. B. McMurray for the Royal College of Physicians of Ireland; by Mr. R. Lane Forsyth for the Royal College of Surgeons in Ireland; by Dr. J. H. Harvey Pirie for the Royal College of Physicians of Edinburgh; by Prof. James Black for the Royal College of Obstetricians and Gynaecologists of England; by Mr. T. B. McMurray for the Royal Australasian College of

Surgeons and the Royal Australasian College of Physicians; by Prof. J. H. Louw for the University of Cape Town; by Prof. I. D. MacCrone for the University of the Witwatersrand; by Prof. I. Gordon for the University of Natal; and by Dr. R. V. Bird for the South African Medical and Dental Council. For the Medical Association of South Africa Dr. R. Theron presented an address in Afrikaans and Dr. A. W. S. Sichel (in Dr. du Toit's absence) read a message in English from Dr. J. S. du Toit, President-Elect of the Association, the President (Dr. J. H. Struthers) being away overseas. The Hon. J. J. Fouché, Administrator of the Orange Free State, also sent a congratulatory message.

The Hon. J. H. Viljoen, Minister of Health, delivered an address conveying the congratulations of the Union Government.

Professor Elliott, President of the College, spoke in reply to these many messages of congratulation.

Dr. F. Daubenton, of Johannesburg, in English and Afrikaans, announced all speakers and presenters of addresses and led the processions of the Council.

### BANQUET AND MAYORAL RECEPTION

A banquet was held at the Wanderer's Club on Tuesday evening, attended by Founders and Associate Founders and their ladies and guests, to celebrate the inauguration of the College and the induction of its first President and Council. Dr. A. W. S. Sichel presided and speeches were delivered by Dr. Sichel, who proposed the toast of the Union of South Africa, Sir Walter Mercer, who proposed the toast of the College of Physicians and Surgeons of

South Africa, and Prof. G. A. Elliott and Mr. A. G. Sweetapple, who replied to the latter toast.

A civic reception was given on Monday afternoon for the Founders and Associate Founders and their ladies by his Worship the Mayor of Johannesburg (Councillor L. V. Hurd, J. P.) in the Upper Hall of the University of the Witwatersrand, Johannesburg.

### OFFICIAL ANNOUNCEMENT : AMPTELIKE AANKONDIGING

#### MEDICAL ASSOCIATION OF SOUTH AFRICA : ANNUAL GENERAL MEETING

Notice is hereby given that the Annual General Meeting of the Medical Association of South Africa will be held at Red Cross House, 14-16 Riebeeck Street, Cape Town, on Wednesday, 3 October 1956, at 9.30 a.m.

#### Agenda

1. Minutes.
2. Annual Report and Balance Sheet.
3. Election of Auditors.
4. Induction of President.
5. Other Business.

#### FEDERAL COUNCIL

Notice is hereby given that a meeting of the Federal Council will be held at Red Cross House, 14-16 Riebeeck Street, Cape Town, on Wednesday, 3 October 1956, at 10 a.m.

#### Agenda

1. Notice convening the meeting.
2. Proxies.
3. Minutes of previous meeting (circulated).
4. Matters arising out of the minutes.
5. Financial statement by Honorary Treasurer.
6. Report of the Executive Committee.
7. Reports of other Committees.
8. Reports deferred from previous meeting.
9. Notices of motion transferred from previous meeting.
10. New notices of motion.
11. Other business.

Medical House  
Cape Town  
17 August 1956

A. H. Tonkin  
Secretary

#### MEDIESE VERENIGING VAN SUID-AFRIKA : ALGEMENE JAARVERGADERING

Kennis geskied hiermee dat die Algemene Jaarvergadering van die Mediese Vereniging van Suid-Afrika gehou sal word op Woensdag, 3 Oktober 1956, om 9.30 vm., te Rooikruis-Gebou, Riebeeckstraat 14-16, Kaapstad.

#### Agenda

1. Notule.
2. Jaarverslae.
3. Verkiesing van Ouditeure.
4. Inleiding van President.
5. Ander Besigheid.

#### FEDERALE RAAD

Kennis geskied hiermee dat 'n vergadering van die Federale Raad gehou sal word te Rooikruis-Gebou, Riebeeckstraat 14-16, Kaapstad, op Woensdag, 3 Oktober 1956, aanvang 10 vm.

#### Agenda

1. Kennisgewing wat die vergadering belê.
2. Volmagte.
3. Notule van die vorige vergadering (reeds uitgestuur).
4. Sake wat uit die notule voortspruit.
5. Finansiële verslag van die Ere-Penningmeester.
6. Verslag van die Uitvoerende Komitee.
7. Verslae van ander Komitees.
8. Verslae van vorige vergadering oorgehou.
9. Voorstelle waarvan kennis op vorige vergadering gegee was.
10. Nuwe kennisgewings van voorstelle.
11. Ander sake.

Mediese Huis  
Kaapstad  
17 Augustus 1956

A. H. Tonkin  
Sekretaris

## PASSING EVENTS : IN DIE VERBYGAAN

*Dr. Denis Krikler*, the holder of a John Adams Grant, has been admitted a member of the Royal College of Physicians of London and also of Edinburgh. He is at present in Boston, USA, where he holds a Fellowship in Gastro-Enterology at the Lahey Clinic.

*Union Department of Health Bulletin*. Report for the 7 days ended 2 August 1956.

*Plague, Smallpox, Typhus Fever: Nil.*  
*Epidemic Diseases in Other Countries.*

*Plague: Nil.*  
*Cholera* in Calcutta, Lucknow (India); Dacca (Pakistan).  
*Smallpox* in Rangoon (Burma); Ahmedabad, Allahabad, Bombay, Calcutta, Delhi, Lucknow, Pondicherry, Visakhapatnam (India); Dacca, Lahore (Pakistan); Tourane (Viêt-Nam); Kisumu, Nairobi (Kenya).  
*Typhus Fever: Nil.*

*Napt Commonwealth Fellowship 1957*. A Fellowship of £350 to enable a medical graduate from the Commonwealth to spend 3 months in the UK in the postgraduate study of tuberculosis, is offered by the British National Association for the Prevention of Tuberculosis. The intention of the award is to provide training and experience for a doctor who will subsequently play his part in the control of tuberculosis in his own country. It is hoped the successful candidate will arrive in the UK by the end of March 1957. Full particulars may be obtained from NAPT, Tavistock House North, Tavistock Square, London, W.C. 1. The closing date for receiving applications is 30 November 1956.

*Alvarenga Prize*. On July 14 1956 the College of Physicians of Philadelphia awarded the Alvarenga Prize for 1956 to George N. Papanicolaou, M.D., Director of the Papanicolaou Research Laboratory of Cornell University Medical College, for his outstanding work in the early detection of cancer. The Alvarenga Prize was established by the will of Pedro Francisco DaCosta Alvarenga of Lisbon, Portugal, who died on 14 July 1883.

*Royal College of Physicians of Edinburgh*. At a Quarterly Meeting of the College held on 24 July 1956, the President, Sir Stanley Davidson, in the chair, the following were amongst those elected Members of the College: C. Freed, M.B., B.Ch. (Rand) and S. E. Levin, M.B., B.Ch. (Rand).

*Southern African Cardiac Society*. The second clinical meeting of the Cape Province section of the Southern African Cardiac Society, was held at Groote Schuur Hospital, Cape Town, on the evening of 19 June 1956, with Dr. Maurice Nellen in the Chair. The programme was as follows:

1. *Dr. J. Gant*. A case of Lutembacher's syndrome complicated by subacute Bacterial Endocarditis.

2. *Dr. B. G. Shapiro*. Intermittent left Bundle Branch Block induced by changes in posture and effort. Report of a case.
3. *Dr. H. Muller*. A case of Fallot's Tetralogy converted into Eisenmenger's Complex by subacute Bacterial Endocarditis.
4. *Dr. Velva Schrire*. The effect of Pulmonary Valvotomy on the systolic murmur in Fallot's Tetralogy and Fallot's Trilogy.
5. *Dr. Maurice Nellen*. The Aortic Ejection Sound. Presentation of illustrative cases and a discussion of this sign.
6. *Dr. Louis Vogelpoel*. Pulmonary Atresia. Presentation of a case to emphasize the characteristic clinical picture.

## IN MEMORIAM

COLONEL H. J. M. BUIST, R.A.M.C. (RETIRED),

C.B., C.M.G., D.S.O.

*Dr. A. Simpson Wells, of Cape Town*, writes: The death occurred in the Hof Street Nursing Home, Cape Town, on 24 July of Colonel Buist, aged 88.

Col. Buist, a son of Major-General Buist, of Perthshire, having qualified M.B., C.M. at Edinburgh in 1890, joined the R.A.M.C. in 1891, and has had a long and very distinguished medical and military record. During the South African War he was on General French's staff throughout, and had endless tales to tell of his experiences, caring as he did for friend and foe alike.



The late Col. Buist

He served in many countries including German South West Africa, and amongst his decorations were the Croix de Guerre, Order of St. Salva and Legion of Honour. These indicate how widely his services were appreciated.

Those who knew him best will think of him as a great gentleman, of noble bearing, with a great love for South Africa, and a kindly humour embracing all men.

Col. Buist married Miss Logan, a daughter of the late Mr. J. P. Logan, M.P., of Matjesfontein, who survives him and for whom great sympathy is felt.

For many years he lived at Tweedside and Matjesfontein where he served as a J.P. He was interested in farming and sport and in the welfare of his fellow citizens. His only son, Major John Buist, Highland Light Infantry, stationed in Germany, flew from the Rhineland and was present at the funeral.

NATIONAL CANCER ASSOCIATION OF SOUTH AFRICA  
FORMATION OF CAPE WESTERN BRANCH

A meeting of members of the National Cancer Association resident in the Cape Western area was held in Cape Town on Monday afternoon, 6 August 1956. Sixteen members were present, and a number of apologies for absence were received. General Sir Roger Wilson was appointed chairman of the meeting.

Dr. Lewis S. Robertson, President of the National Association addressed the meeting. He announced that the National Fund had reached the sum of £375,000 as at 31 December 1955, of which £61,805 had been collected in the Cape Province. Up to the present time the Cape Town contributions amounted to £14,300.

The executive body of the National Association was the Council of Management, which consisted of the President, Hon. Life Vice-President, Vice-President, Hon. Treasurer, one representative

of the Union Government and of each of the 4 Provincial Administrations, and 3 elected members for each of the 4 Provinces. All expenditure was ultimately subject to the approval of the Board of Trustees, the members of which were not subject to election at the annual general meeting of members of the Association, and which consisted of 2 members for each Province, 2 representatives of the National Association and a representative of the Union Government.

For 1956 £35,000 had been set aside for research, including £9,802 in the Cape Province, £8,485 in the University of Natal, £6,973 in the S.A. Institute for Medical Research and £3,705 in the University of the Witwatersrand, £3,720 at Lourenço Marques, and £2,200 to the C.S.I.R. The Cape grants included £5,100 for statistical research throughout the Cape Province (Dr. J. Muir

Grieve, study of therapeutics, £28,000 both had scientific to obtain hoped were be consider Also patients Dr. K. Branch (1) the material act as a

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Grieve, University of Cape Town), and £4,702 for a biochemical study of environmental action of X-rays and gamma rays in therapeutic irradiation (Dr. M. H. Silk and Dr. J. Nunn, Liesbeek Clinic, Cape Town).

£28,000 had been budgeted for 1956 for educational purposes, both lay and professional. Large numbers of propaganda pamphlets had been and were being widely distributed. Technical and scientific publications were imported from overseas for distribution to the medical profession. A few excellent films have been obtained from the USA for professional education, and it was hoped to build up a cancer-film library. Propaganda posters were being designed, and other educational projects were under consideration.

Also under consideration were future projects for the care of patients and comfort and assistance for patients and relatives.

Dr. Robertson strongly urged the formation of a Cape Western Branch. The immediate functions of branches would include (1) the organization of the local distribution of propaganda material, (2) the establishment of an information service, (3) to act as a receiving depot for donations, etc., (4) local fund raising,

(5) local information of matters pertaining to the Association.

On the motion of Sir Roger Wilson the meeting agreed to the formation of a Cape Western Branch of the National Cancer Association, the geographical boundaries being the same as those of the Cape Western Branch of the Medical Association of South Africa, viz. on the East including the magisterial districts of Kenhardt, Carnarvon, Victoria West, Beaufort West, Prince Albert, Outshoorn and Knysna, on the North the Orange River, and on the West and South the coastline. Branch by-laws were also adopted.

The following branch officers and council were elected: *Chairman*—Sir Roger Wilson; *Vice-Chairman*—Dr. J. Muir Grieve; *Hon. Secretary*—Mr. R. B. McIntyre; *Hon. Treasurer*—Mr. J. J. van der Berg; *Council Members*—Mr. W. L. Phillips, Dr. N. G. Cloete, Mr. M. Raphael and Prof. M. R. Drennan (for 1 year), Drs. J. P. de Villiers, J. N. Jacobson, A. Simpson Wells and Ivor M. Shulman (for 2 years), and Mr. J. G. Finlay, Prof. J. van Rooijen and Drs. J. A. S. Marr and G. de Kock (for 3 years). Dr. J. P. de Villiers was appointed as representative of the Branch on the Council of the National Association.

## BOOK REVIEWS : BOEKRESENSIES

### CARDIOVASCULAR INNERVATION

*Cardiovascular Innervation*: By G. A. G. Mitchell, O.B.E., T.D., M.B., Ch.M., D.Sc. Foreword by Sir Geoffrey Jefferson, C.B.E., M.S., M.Ch., M.Sc., LL.D., F.R.C.P., F.R.C.S., F.R.C.S.I., F.R.F.P.S., F.A.C.S., F.R.S. Pp. 356 with 217 illustrations. 55s. net. London: E. & S. Livingstone Ltd.

*Contents*: Foreword. Preface. Acknowledgments. Chapter I. General Information. Chapter II. Autonomic Representation in the Cerebrum. Chapter III. Autonomic Representation in the Cerebellum, Brain Stem and Cord. Chapter IV. Autonomic Outflows and Endings. Chapter V. Autonomic Afferents and Endings. Chapter VI. The Peripheral Parts of the Autonomic System. Chapter VII. Innervation of Vessels in the Head and Neck. Chapter VIII. Innervation of Vascular Structures in the Thorax. Chapter IX. Innervation of vessels in Abdomen and Pelvis. Chapter X. The Innervation of Vessels in the Limbs. References. Index.

Professor Mitchell is no newcomer in this field and his papers on the autonomic innervation of the various organs became standard references soon after they were published. His book under review is, however, a more specialized account on the anatomy of the nerve supply of the heart and blood vessels, a field which has been very much neglected by anatomists although it has attracted the attention of physicians and surgeons in ever-increasing measure within recent years. The latter will welcome this authoritative account; hitherto they have had to turn to papers scattered throughout the world—literature of the last 40–50 years.

Mitchell does not provide a dry description of his excellent and accurate anatomical dissections, which naturally form the basis of the book, but he incorporates also the findings of his clinical colleagues and presents a lively, well-balanced and comprehensive account of an increasingly important subject. He thus provides his reader with a firm foundation on which to base his own interpretation of physiological phenomena, clinical concepts and surgical measures in this field.

In the past, a great deal of uncertainty and confusion has been prevalent on this subject, brought about by the uncritical application to man of knowledge gained in animals. It is therefore a most important facet of this book that it is based on dissections and clinical experience gained in man.

The text is lucid and well written, the illustrations numerous and instructive, and the production superb.

This book can be highly recommended with the assurance that the reader will find it most fascinating and informative.

R.H.G.

### MEDICAL ORTHOPAEDICS

*Text-Book of Orthopaedic Medicine. Treatment by Manipulation and Massage. Volume II.* By James Cyriax, M.D. (Cantab.), M.R.C.P. (Lond.). Pp. 373 + xv, with illustrations. 21s. 0d. London: Cassell and Company Ltd. 1955.

*Contents*: Part I—Principles and Technique of Manipulation and Massage. 1. Theory and Practice of Massage. 2. Technique of Deep Friction. 3. Indications for and against Deep Massage. 4. Passive Movement. 5. Active Movement. 6. Rehabilitation after Injury. 7. Bone-Setting. 8. Hydrocortisone. Part II.

9. Classification. Techniques and Effects of Massage. 10. Massage in Plastic Surgery. Part III—The Illustrations: Summaries of Procedures and Results. Part IV. 11. Treatment of Varicose Ulcers. Index.

Dr. Cyriax is the Director of the Department of Physical Medicine at St. Thomas's Hospital, one of the leading centres teaching physiotherapy. He holds the view that physiotherapy based on sound principles and adequate technique will always be better than the empirical manipulations of bonesetters, chiropractors and osteopaths who have no demonstrable basis for their theories.

In this volume, he describes lucidly the why, the when and the how of the subject. It is meant primarily for the physiotherapist, but it would be well if the medical profession would also read Parts I and II (about 60 pages) and so learn when to use physiotherapy and exactly what to prescribe. Much of the time our hospital masseurs spend administering—senselessly and uselessly—radiant and other forms of heat, would then be more gainfully used. He also does well to stress the value of correct, and the dangers of indiscriminate, manipulation in the treatment of disc injuries and the unnecessary hardship suffered by a patient with a lumbar-disc protrusion if immobilized in a plaster jacket.

The author gives us the latest views on treatment in his subject and it would appear that the expert physiotherapist must still be cruel to be kind. Some methods are laborious and time-consuming and require fortitude on the part of the patient. Yet so rapid is progress in this day and age that, even in the short time that has elapsed since this book was written, we see trends that promise more expedition and comfort in the treatment of many injuries of joint and muscle. In the next edition we expect to read of the wider use of hydrocortisone, manipulation under local anaesthetic, ultrasonics, muscle relaxants, etc., etc.

But these are suggestions for the future, and we congratulate Dr. Cyriax on his admirable pioneering effort.

A.J.H.

### A TEXT-BOOK FOR MIDWIVES

*The Midwife's Text-Book.* Seventh Edition. By R. W. Johnstone and W. I. C. Morris. (Pp. viii + 396, with 219 illustrations.) London: A. & C. Black. 21s. net. 1955.

*Contents*: I. Anatomy and Physiology: 1. Pelvic anatomy. 2. Physiology of menstruation. II. Physiology of Pregnancy: 1. Conception. 2. Changes in the mother's body resulting from pregnancy. 3. The diagnosis of pregnancy. III. The Foetus. IV. The Principles of Ante-natal Care and Hygiene. V. Labour in the Various Presentations: 1. Preparations for the confinement. 2. The clinical course of normal labour. 3. Physiology of labour. 4. Mechanism of normal labour. 5. Management of labour. 6. Nursing points in the management of labour. 7. Posterior positions of the occiput. 8. Face and brow presentations. 9. Breech presentation. 10. Transverse lies of the foetus. 11. Plural births. VI. The Normal Puerperium. VII. Asphyxia Neonatorum. VIII. Pathology of Pregnancy: 1. Diseases in association with pregnancy. 2. Vomiting in pregnancy. 3. Toxaemia of pregnancy. 4. Haemorrhage in the early months of pregnancy—Abortion—Hydatidiform mole—Tubal pregnancy—Displacements of the uterus. 5. Abnormalities of the amnion, placenta, and cord. IX. Pathology of Labour: 1. Abnormal uterine action—Precipitate labour—Prolonged labour—Obstructed labour—Contracted pelvis—Prolapse of the cord. 2. Ante-partum haemorrhage. 3. Post-partum haemorrhage. 4. Injuries to the genital tract. X. Pathology of the Puerperium. 1. Puerperal infection. 2. 'White leg'. 3. Breast troubles. 4. Sudden death. 5. Insanity. 6. Post-natal examination and supervision. XI.

Drugs and Solutions in Common Use in Midwifery Practice. XII. Obstetrical Operations in Domestic Practice. XIII. Ante-natal and Post-natal Exercises. XIV. The Newborn Child. 1. The physiology and hygiene of the newborn. 2. Breast feeding. 3. Artificial feeding. 4. Prematurity. 5. Diseases of the newborn. XV. The Rhesus Factor and its Importance in Midwifery. XVI. Radiography in Obstetrics. XVII. Midwifery in Relation to Public Health. XVIII. History of Midwifery. Index.

A book may fall into one of three categories—good, bad or indifferent; without hesitation it may be said that this text-book qualifies for the first. One is immediately impressed by the easy, lucid manner in which the subject-matter is presented; and technical terms are clearly defined so that even the beginner will have no difficulty in understanding the text, which is well served by diagrams and photographs.

Antenatal care and hygiene in pregnancy are fully described and special attention is given to the important relaxation-exercises which today are accepted as an essential part of antenatal supervision. The mechanism of labour is presented in a simple manner. In the management of labour the writers stress the all-important subject of surgical cleanliness and advise the liberal use of antiseptics in the prevention of intra-uterine infection.

The emergency treatment of the various complications and mal-presentations met with are described in a concise manner and specific instructions given regarding the preparations to be made while awaiting medical aid. The management of postpartum haemorrhage is set out in detail, especially manual removal of the placenta. A sound knowledge of this technique is essential, for it may be a life-saving procedure where medical aid is not immediately available.

On the nursing aspects of midwifery the authors have had the valuable advice of the Matron of the maternity wing of the Edinburgh Royal Infirmary. There is a fascinating chapter on the history of midwifery.

There is little to criticize and the accoucheuse who is versed in the knowledge contained in this book should have no difficulty in practice. It can therefore be recommended without reservation to the nurse in training as well as a book of reference for trained personnel.

S.B.C.

## A TUBERCULOSIS SYMPOSIUM

*Ciba Foundation Symposium on Experimental Tuberculosis, Bacillus and Host. With an Addendum on Leprosy.* Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch. and Margaret P. Cameron, M.A., A.B.L.S. Pp. 396 + xii, with illustrations. 42s. 6d. London: J. & A. Churchill Ltd. 1955.

*Contents:* 1. The Proteins of the Tubercle Bacillus. 2. Chemical Structure and Biological Activity of Mycolic Acids. 3. Mycobactin: A Growth Factor for Acid-Fast Bacilli. 4. Polysaccharide Components of the Tubercle Bacillus. 5. Granuloma-Producing Properties of Synthetic Fatty Acids. 6. Early Tissue Reactions to Tubercle Bacilli and their Products. 7. Succinic Dehydrogenase Activity in Tuberculous Animals. 8. Biochemical Factors which may Influence

the Fate of Tubercle Bacilli in Tissues. 9. Bacterial Components Concerned in the Early Phase of Infection. 10. Serological Activity of Various Fractions of Culture Filtrates of the Tubercle Bacillus. 11. The Serology of Tubercle Polysaccharides. 12. The Chemical Nature of the Lipoidal Factor of the Tubercle Bacillus Responsible for the Induction of Tuberculous Hypersensitivity. 13. Tubercle Bacilli as Immunological Adjuvants. 14. Relation Between Growth Inhibitory Property of Monocytes for Tubercle Bacilli and Hypersensitivity to Tuberculin: An *in vitro* Study. 15. Tuberculous Hypersensitivity and Desensitization. 16. Tubercle Bacilli in Infected Tissues Grown on Tissue Culture. 17. The Role of Bacterial Multiplication in the Establishment of Immunity to Tuberculosis. 18. On the Mode of Action of Cortisone on the Pathogenesis of Tuberculosis and its Implications for the Nature of Genetic Resistance to the Disease. 19. The Mechanism Involved in Acquired Immunity to Tuberculosis. 20. Human Lung Tissue Reactions to the Tubercle Bacilli in Relation to Chemotherapy. 21. Influence of Certain Surface-Active Agents on the Host-Parasite Relationship in Experimental Tuberculosis. 22. The Relationship Between the Growth Requirements and the Pathogenicity of Isoniazid-Resistant Mutants of Tubercle Bacilli: A Study of the Role of Host Physiology in Susceptibility to Infectious Disease. 23. Addendum on Experimental Leprosy.

This book is a report of the proceedings at a symposium on the tubercle bacillus and on the reaction of the host to the bacillus. The symposium was under the chairmanship of Dr. A. R. Rich, a recognized world-authority on tuberculosis. Like the reports of other Ciba Foundation symposia, the main papers presented as well as the full and frank discussions which followed each paper, are printed in full. The reader is therefore presented not only with the views of recognized authorities but also the critical comments of other experts on those views—a particularly valuable feature. This symposium concerns those aspects of experimental work on tuberculosis which, in the present era of successful therapy, has tended to slip into the background, but which nevertheless remains of great importance.

Several of the papers deal with the composition of tubercle bacilli, their proteins, carbohydrates and lipids. Others deal with the significance of these in immunological reactions demonstrable *in vitro*, or with the part they play in the production of immunity against the disease. It is not only to the student of the tubercle bacillus that the symposium is of interest. All immunologists, for instance, will find the papers and discussions on the serological reactions and artificial immunization against bacteria and bacterial fractions of particular interest. The adjuvant effect of certain waxy constituents of the tubercle bacillus is well known. To them also can be attributed the development of the delayed type of sensitivity as distinct from the immediate or anaphylactic type which follows injection of tuberculoproteins alone. There continues to be no correlation between antibodies demonstrable *in vitro* or delayed hypersensitivity and resistance to infection.

This book serves a very useful purpose in focusing attention on the experimental work being done with tubercle bacilli and will help to familiarize bacteriologists and immunologists with the most important advances in this very extensive field of research. The Ciba Foundation and its editorial staff can justly be proud of the high standard maintained in the symposia and in their publication.

M. v. d. E.

## CORRESPONDENCE : BRIEWERUBRIEK

PROF. SIDNEY L. KARK

*To the Editor:* I was very interested to read in your issue of 10 March 1956 the pleasant section regarding my good friend Professor Sidney Kark.<sup>1</sup>

I was a little sorry, however, to see that through some minor inaccuracies in the final paragraph, there was no mention of his fruitful relationship with this Organization.

Professor Kark was actually invited to Israel by the Hadassah Medical Organization (the medical arm of Hadassah the Women's Zionist Organization of America) and the Israel Ministry of Health, and the Department of Family Health which he helped to establish here is a key part of Hadassah's Community Health Division.

The Hadassah Medical Organization, as well as our colleagues in the Hebrew University, are proud to have this fine South African physician on the Faculty of our Hebrew University-Hadassah Medical School.

Hadassah Medical Organization  
P.O. Box 499  
Jerusalem

27 July 1956

1. Report (1956): S. Afr. Med. J., 30, 250.

K. J. Mann, M.D.  
Director General

THE DOCTOR'S RIGHT TO DISPENSE

*To the Editor:* The threat to prevent doctors from dispensing medicines for their own patients has not yet been removed.

Several excellent reasons why doctors should continue to dispense have already been stated in the *South African Medical Journal*. Here is a further one:

Because of their intimate knowledge of drugs gained from dispensing and their knowledge of diseases, doctors have invented many new medicinal mixtures, powders, pills, lotions, paints, ointments and creams, which have proved of the greatest benefit to the sick and suffering.

If doctors are to maintain this close knowledge of drugs which has enabled them to compound new medicines, it is of vital importance that they retain their right to dispense medicines for their patients. Therefore, for the sake of suffering humanity and of the art and science of medicine, it is the duty of doctors to retain their right to dispense.

Dispensing Doctor

31 July 1956